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ORIGINAL ARTICLES.

CHOLELITHIASIS AND CHOLELITHOTOMY.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

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My paper, of which I beg to present a partial summary, is based upon a study of some forty cases of gallstone disease and a review of the chief literature of the subject. The personal observations concern eleven cases upon which I operated, comprising: One cholecystectomy; one choledochotomy; two cholecystenterostomies; six cholecystotomies with temporary fistulæ; one cholecystotomy by long drainage button; four autopsies in deaths from cholelithiasis without surgical interference; eight cases which for various reasons were not subjected to operation, in which the diagnosis was confirmed by passage of gallstones, and sixteen cases in which a diagnosis of gallstone was more or less positively made, but not confirmed by recovery of the calculi either by operation or in the stools.

In the course of this brief experience I have been strikingly impressed by several facts, among which may be noted: The highly overdrawn notion of biliary colic and a misinterpreted view of the symptomatology of cholelithiasis prevalent in the general professional mind; the mistaken prominence given to jaundice as a symptom, and the tenacity with which a childlike pathology explaining its presence or absence in the purely mechanical action of the stone is held; the readiness with which a phenomenal (and it might seemingly be thought an astonishingly unexpected) latency of gallstones is on all hands admitted without dissent, though this dogma when scrutinized rests upon evidence little better than bad logic, viz., so many people are found after death to have had gallstones who made no complaint about them during life.

The mechanics of the profession appears to have been thrown completely into our pathology; for the average practitioner often pursues persistently for months and years his very unmechanical as well as irrational treatment. If indications and contraindications for interference are in some diseases more numerously than usefully set forth, our brochures on this topic are often singularly silent or those given appear strangely farcical, *e.g.*, as given by one German authority, the size of the concretions.

When surgery is at last reached it has seemed to me that the mind is too often occupied with this or that set method, rather than with a determination to seek actual conditions and best meet them. In proof of this I need but say that when Murphy brought out his wonderful button too many of us went to making cholecystenterostomies in cases neither demanding nor justifying cholecystenterostomy, thus putting a grand good thing to base uses.

It is becoming better understood that jaundice is a comparatively infrequent symptom, at least in the earlier course of the average cholelithiasis, and that cases frequently run their whole course even to a lethal ending without icterus. Riedel has long since shown us that the jaundice is very often due to catarrh of the bile tracts, the result of infection rather than to the impaction of stones. Yet I believe we still give too much credence to mechanical impaction as a cause of jaundice. I herewith report the autopsy of a young and otherwise healthy woman who died as a result of a six weeks attack of biliary colic, with nearly constant pain, tenderness and vomiting. She had had but one previous attack and that of short duration nearly one year before. Aside from these two attacks her health was perfect. There was a trace of bile present in the urine, but at no time had there been a trace of icterus observable by friends, trained nurses, or physicians. The stools were not clay colored.

The patient first came under my observation a week before death. A diagnosis of cholelithiasis was made and operation advised despite the terribly exhausted condition of the patient. Surgical interference however was refused by her friends. At the autopsy five gallstones each about three-eighths inch in diameter were found, these being located in the gall bladder and two impacted in the common duct at the ampulla of Vater. The stone nearest the intestine appeared to be immovably fixed, the duct dilated to the size of my little finger. Yet this astonishing state of affairs did not prevent the bile from passing between the dilated duct walls and the stone. There can be no doubt but a moderate swelling of the mucosa of the tract would have closed the small calibred opening through the duodenal walls, or have closed the dilated walls about the stone and rapidly obstructed the biliary flow. I believe that the icterus which often accompanies cholelithiasis is due even in larger measure than any of us have yet conceived to inflammatory changes in the bile tracts and but in very small measure to the simple lodgement of calculi in the common or hepatic ducts. At any rate the presence or absence of icterus must not too strongly influence us as to the location of the stone.

It seems to me that we are in need of some relatively fixed notions as to the indications pro and con for surgical interference in this affection. Perhaps very few of us would regularly advise cholelithotomy as soon as a diagnosis is made. Though such a course is, in my opinion, open to many objections, it would be doubtless preferable to the one so often chosen, *i.e.*, floating along by guess and by chance until the patient requests operation as a relief from unbearable suffering, or because he is clearly in imminent danger of death. Though I believe the percentage of per-

sons who have suffered severe attack of biliary colic without surgical means, is not very large, yet spontaneous or medical cures must be admitted. The discomforts and dangers of individual cases vary greatly. It would therefore seem that our indications for cholelithiasis ought to be divided into relative and inoperative. In operating upon relative indications, good sense ought to be used and circumstances well considered.

If the attacks be frequent, the calculi not present and the symptoms be unrelieved by a reasonable hygienic and medical course of, at most, a few weeks' duration, so safe an operation as cholecystotomy at this stage, under proper hospital and modern operative advantages, is doubly preferable to further delay, even though no very threatening symptoms have developed. First, as the easiest escape from present suffering; second, as a preventive measure against the ever possible dangers of cholangitis, duct impactions, etc., which may entail a much more dangerous and trying operation upon a patient hardly able to bear any surgical interference.

I am firmly convinced that we shall in time come to see that *the* proper treatment of active cholelithiasis, with few exceptions, is early surgical interference. Nevertheless, so long as the patient is in no evident danger, a rational management may be tried through one or several attacks, as good judgment may dictate. For biliary or renal colic may be severe or repeated without indicating that natural cure is impossible, provided the engagements be short and decisive, uncomplicated by infection, and the peace, however short, fairly complete. But when, after several days' duration, only partial peace is declared, the general health begins to fail, local tenderness persists, lesser paroxysms recur and jaundice threatens, operative interference may, for practical purposes, be said to be imperative. The practical distinction between relative and imperative indications in surgery is of the greatest importance, and unfortunately too often overlooked. Imperative indications justify operation under conditions which might be almost criminal in the presence of only relative indications.

It seems to me a very pertinent question whether or not operation should be advised in the midst of a recent attack of colic. Kehr, having, as he believes, learned to distinguish between gall bladder colic and gall duct colic, advises waiting when the latter exists, lest the stone be left in the choledochus or a difficult choledochotomy need to be performed. But most of us will be often quite unable to make this differentiation with any certainty, while to delay long with a calculus in this most dangerous locality will often jeopardize the patient. Presumably he means to advise against immediate interference in the midst of an acute biliary attack, while a stone may be supposed to have advanced deeply into the choledochus without having time to be expelled. In this form the advice is clearly wise. Had the case referred to been operated upon hastily the night before the stones passed, it is not improbable that one might have been left in the duct, if not removed at the expense of a more serious operation than ordinary cholecystectomy. But, as already stated, it is chiefly disagreeable repeated minor attacks of gall bladder colic or the failing health due to incompletely relieved attacks which call for surgical decision. Effectual expulsive attacks are mostly decisive in a few days at most, for when a stone remains longer impacted, the ducts are soon dilated, expulsive power is lessened, as evidenced in less severe and decided paroxysms, and the stone is usually left in undisputed or feebly contested possession of the field. The diagnosis once positively made, it would appear less difficult for a surgeon of sense to approximate reasonably the burdens and dangers of the disease in a given case, to distinguish when to advise waiting, when to recommend operation and when to insist upon it, than to formulate rules for others. In such matters hard and fast rules are absolutely irrational. Infinite certainty can not be achieved. Probabilities are the rule of life, and remain here the only and safest guide. If in certain cases delays are advisable, in others, like Case No. 7 of ulceration of the gall tracts, the first attack may call for prompt action. One prominent authority seems to regard the size of the concretions as having an important bearing upon operative indications. To my mind this is an evidence of the tenacity with which we unconsciously cling to the mechanical interpretation of calculous disorders even after we ought to know the pitfalls of this childlike pathology. In the first place, we can foretell absolutely nothing as to the size of the stones before they are removed or passed. In the second place, however much the theory that a small stone ought and that a large stone can not be passed may appeal to rational simplicity, my last case proved to me that facts fail to follow mathematical fancy. This young woman had suffered for one and a half years, until almost tired of existence, from severe and frequent colics, yet the stones on removal were astonishingly small, the great majority being the size of apple seeds, and none larger than a pea.

Even a limited experience in cholelithiasis leads one to appreciate the variety of the conditions liable to be encountered, and to recognize that a variety of operative technique is required to meet the demands of different cases. Yet there must be procedures of preference. All modern observation goes to show that nine times out of ten, the gallstones occupy the gall bladder alone. Ninety-five times out of one hundred they occupy the gall bladder alone or it and the cystic duct alone. Such a bladder is frequently deeply and generally more or less diseased. In the vast majority of cases, therefore, the indication appears to be, to open the gall bladder, remove the stones and débris, and temporarily drain the diseased organ. After the most careful evacuation stones, sand or fragments are sometimes left, and thus the temporary drainage insures against recurrence.

I therefore believe that cholecystotomy with temporary fistulæ is the operation of election in the average cholelithiasis, the one to be chosen probably eight or nine times out of ten. In the remaining minority a variety of less usual circumstances, whether inherent in the anatomy or condition of the patient, in local changes in the gall tracts or location of the stones, etc., demands a modification in the operation. Thus, when the gall bladder, as in my Case No. 3, is atrophied to a mere rudiment, or sloughing, cholecystectomy is rational, otherwise I can see no reason for removing this organ. On the other hand, when ducts are impacted with stones, it is perfectly clear that complete removal of the stones is the great and ideal desideratum, choledochotomy added to the operation already advised. Under such circumstances, if manipulation and crushing fail to empty the impacted ducts, the next choice is choledochotomy.

Happily, impaction in the common and hepatic ducts is much rarer than many suppose. The highest estimates place the proportion of common duct impactions at less than 4 per cent., and of the hepatic in less than 1.5 per cent. of cholelithic cases. But choledochotomy is always difficult, frequently dangerous and sometimes impossible of practical execution.

DISCUSSION.

DR. DONALD MACLEAN—What I have heard has impressed me with the belief that has been gradually growing in my mind for a good while and that is that there is a great and magnificent field for surgery in connection with the gall bladder and the gall ducts. I believe that that department of surgery is in its infancy, and there is this to say for that department, in contrast with ovariotomy, hysterectomy and other operations of that kind, that it is altogether conservative. If you save your patient you do not save a mutilated and more or less unhappy human being. If you secure a success in an operation of that kind the patients get well and has the satisfaction of feeling that they are relieved from a painful, dangerous and distressing disease and that they are just as good as they were when they first started in life. There is a great difference between this department and those of a mutilating and injurious nature. I do not mean to say anything against the removal of ovaries, uterus and testicles where it is necessary to do so. There will always be this hopeful and inspiring feeling about operations on the gall bladder, that is, if you save your patient from great pain and great danger, and the patient gets well, there is everything to be gratified about and nothing to regret. I believe that there is a vast field for surgery in this very direction, and it is my opinion that, as far as the surgery of the gall bladder and gall ducts is concerned, it is, as I have said before, only in its infancy. As the time goes on and experience accumulates the surgery of these organs will ultimately show grander and more satisfactory results than the surgery of any other organ.

DR. ALEX. HUGH FERGUSON, Chicago—Cholelithiasis is not a medical subject but a surgical one. These cases are rarely affected by the efforts of nature and usually resist medication. That being the case the question is when shall we operate? Let us picture a few of the clinical phases. First the patient may be seized with colic with or without jaundice. Having this colic and jaundice you examine the gall bladder and you will find it enlarged and the cystic duct obstructed. Mucus flows in and the gall bladder becomes enlarged so that apparently there is a tumor there. This is the time to operate as you have seen the case early and you can select your own operation. The operation of election is to communicate with the gall bladder externally. The cases often commence with colic and you then have this enlargement over the gall bladder. After this the stone falls back into the gall bladder, the attack is over and shortly thereafter the patient will have another attack. Jaundice then develops and this is a graver symptom than colic. The stone is now impinged upon the common duct and you have obstruction. If the stone be a small one it may pass through, but if not, it may force its way into the common duct, where it becomes stuck and dilates this duct. Subsequent attacks will occur and then the gall bladder contracts. When the stone is in the common duct the gall bladder becomes obliterated, and I know of one case in which I could find no gall bladder. The cases of one stone are more difficult than those where there is a large array of stones. The size of the gall bladder is no indication, and you can not tell whether the stones were passed through or not. You may find a gall bladder filled with stones that have not passed down. They may have become attached to each other. Then again you may find a number of stones of various sizes. How can you tell whether or not the stones are going to pass through? If the patient has colic and jaundice it is imperative to open the gall bladder, otherwise the next symptom will be pyrexia. If you wait until this what does it mean? That we have another complication. The stones have entered the lining mucous membrane and the germs have found an entrance into the denudation. These are difficult cases and no case should be left until pyrexia takes place. Long continued jaundice may occur in cholelithiasis. It is these cases that exist for months or years that are characteristic of a stone in the common duct as compared with the jaundice which takes place in malignancy. The stone in jaundice floats backward and forward and occasionally some bile gets down which keeps the patient alive. The surgery of the gall bladder is pretty well settled, and the operation is to open it and communicate with it externally. How will you do it? By attaching the gall bladder to the peritoneum and skin and suturing them together has been mentioned, but it must be remembered that 33 per cent. of these operations have resulted in permanent fistulæ. That was the objection of Murphy when he invented his wonderful button. If we perform cholecystotomy properly why not attach the gall bladder to the peritoneum? It should be united to the upper and not to the middle and lower portion. It will naturally form slight peritoneal adhesions. If the formal opening has been done away with and it has been drained, for the time being there is no further use for it. Stones may be situated in the enlarged gall bladder, and if there are a number of them they may get by the gall bladder, the cystic duct and the hepatic duct. Now as to the jaundice. Jaundice cases are difficult to operate on as they stand the operation and the chloroform very badly. Beside this, hemorrhage may occur and our duty in these cases is plain, do as little operating as possible. Try to tide the patient over from being killed with the jaundice. As soon as we unite the gall bladder to the peritoneum and clear out the gall bladder and hepatic duct, and if we can with proper curets clear out a little further our object is done. As soon as we see bile our work is over. We know that after we do that stones will follow and the common duct and hepatic duct will clear up. All that is necessary is for us to unite the gall bladder to the external wound. The most difficult surgery of the gall ducts is obstruction of the common duct, the operation for which is the opening of the duct or choledochotomy. In all of these cases when the stone is situated in the upper two-thirds of the common duct it is clear that an external operation must be done. There are two ways of getting at the common duct, one external and the other internal to the duodenum, of which the former is the better. If you have jaundice the incision should be either oblique or transverse and I think the oblique gives more room. As we pass our fingers in we find we are able to get two fingers into the foramen of Winslow. The common duct is nearest to us and this is the best way of opening it. You then separate the duodenum and you may have to dislodge it. Remove the stone if you can, and very frequently you can feel it *in situ*. The greatest difficulty is when the stone is impacted just at the opening of the duodenum. What we should do then is not quite clear. You might open the duodenum but how shall you know whether the common duct is patulous or not? This is very difficult to tell. A good way is to take a glass tube that is bulbous at the end with a rubber bulb attached to it. This will become impinged in the duct. You fill the bulb with water and you ascertain whether this water will flow through or not. If it will, I stop operating.

DR. J. C. OLIVER—Dr. Dunn reports a case of a healthy young woman who had attacks of biliary colic without jaundice. I would like to ask what was found to be the cause of death at the autopsy.

DR. HUNTER MCGUIRE, Richmond, Va.—I was very much interested in Dr. MacLean's remarks on this subject. It has been worth the trip down here to listen to the address delivered by Dr. Osler this morning, in which he criticised the medical treatment of years ago. I sometimes wonder what surgeons will say of us a hundred years from now. With regard to Dr. Dunn's operation, I feel a little anxiety about it. I believe that after awhile some one will stumble upon a way of dissolving gallstones so that operation will not be necessary. By this time the gentleman who suggested castration for prostatic enlargement will not wish to see the operation performed.

DR. DUNN (in closing the discussion)—I have not much more to say. With regard to the young lady referred to by Dr. Oliver, she died of exhaustion. She was unable to keep anything on the stomach for six weeks and she simply died. I was sorry to hear Dr. Ferguson speak of the tumor symptom of gall bladder disease. I took much pains to find fault with the ideas that have been so prevalent in the profession as to the diagnosis of gallstone disease but I did not refer to it in my paper. A good many country fellows, like myself, when we read in ordinary books, get an idea that there should be jaundice or tumors or colic resembling the pains of childbirth. My paper was not intended to tell anything wonderful about gallstone operations. We already have plenty of technique and what we need is a little diagnosis. I have not found the tumefaction in any cases. If enlargement of the liver dullness is meant by tumefaction it is very frequently present, but I think we already have in our minds too much of an idea of the enlargement of the gall bladder as a symptom of cholelithiasis. Sometimes this not only is not enlarged, but one of my patients dies without this enlargement. If a tumor was present it was independent of the distended gall bladder.

THE TECHNIQUE OF REMOVING THE APPENDIX VERMIFORMIS CECI; REPORT OF ONE HUNDRED CASES.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association, held at Atlanta, Ga., May 5-8, 1896.

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Intestinal surgery has, within the last few years, received a long-needed attention. The correct diagnosis of the diseased condition of the appendix, and its operative treatment, has demonstrated the great possibilities of intestinal surgery. As a result we are now saving a class of patients which we have been unnecessarily burying all these many years. As there is a great diversity of opinion as to operative technique it affords a fertile field for our careful consideration.

Preparation for the Operation.—The patient should receive a general bath in which he is thoroughly washed with a flesh brush and green soap and water, as hot as can be comfortably borne. The abdomen and pubes are shaved, and a green soap poultice applied from two to six hours, followed by a washing with sterilized water, to remove the epidermis which has been acted on by the soap. A towel, wet with 1 to 1,000 solution of bichlorid, is applied until the time of the operation. When upon the table the skin is bathed with ether and alcohol, and covered with a sterilized towel. Patient is now ready for the operation.

The nails of the operator and the assistant should be short and smooth, their hands and forearms should be washed with soap and water, and with a brush for five minutes. After rinsing with sterilized water, they are immersed in 1 to 1,000 bichlorid solution for ten minutes. This method of hand disinfection has stood the test of bacteriologic examinations. When a more hasty preparation is required, permanganate of potash and oxalic acid are used, according to Holsted.

All dust in the operating room should be removed with a cloth wet with bichlorid solution. As operations frequently have to be performed in an uncleanly house, all dust and dirt in the room, on the furniture, etc., should not be disturbed before the operation. Place a washtub in the middle of the room, and pour boiling water into it. The steam will soon moisten the dust so it will fall to the floor, and the germs with it. You have then a pure atmosphere in which to operate.

Instruments should be sterilized by boiling. Instrument trays should be placed in boiling water, or filled with 5 per cent. solution of carbolic acid. Sponges should be discarded. Sterilized gauze is much safer. All dressings should be wrapped in sterilized towels ready for use when wanted. Care in these minor details is all important.

The Incision.—Surgical opinion as to the length of the incision varies from one and one-half inch to seven or more inches. When we take into consideration the future welfare of the patient, a condition which can not be overlooked by the surgeon, whether the patient be a manual laborer or a brain worker, in either case he is entitled to as firm and sound abdominal wall as can be secured. The shorter the incision, the shorter will be the time the patient must remain in bed, and the more secure will the abdominal walls be. The much criticised statement of Dr. Morris, "An inch and a half a week and a week and a half," contains a sound surgical principle.

While we know that a seven inch incision will unite as soon as an inch and a half, we also know that, with a short incision, the patient will be in a safer condition to leave his bed in from ten to fourteen days, than the one with a seven inch incision will be in six weeks. In fact, with a long incision, it is a question if the patient will ever be secure from a ventral hernia.

Another very important point is, that the intestines should be manipulated as little as possible.

The shock to the patient and the severity of the colicky stage following the operation, is in proportion to the degree of manipulation to which the intestines are subjected. With a long incision, the escaping intestines protected with a towel are exposed to the air, oftentimes becoming more or less chilled. Much manipulation is required to return and retain them within the abdominal walls. The chance for sepsis and the looping or twisting of the intestines is also great.

In chronic recurrent cases, the writer makes an incision one and one-half inches long directly over the appendix, which has been previously located by palpation, and sufficiently oblique to follow the fibers of the external oblique aponeurosis. When the peritoneum is reached, a catgut suture is passed through it at the upper angle of the incision, before it is cut through. This prevents its retracting and is of material aid in stitching the edges of the peritoneum. This is what Dr. Morris calls his "guy line" device. In complicated cases, the length of the incision must be determined by the room required. I find it best to commence with a short incision and then enlarge as it is necessary.

Method and Complications in Finding the Appendix.—The incision made, the problem of finding the appendix presents itself. Passing the thumb and index finger through the small incision, one quite readily seizes the colon, which is distinguished by a longitudinal muscular ribbon, which is drawn through the incision and returned to prevent exposure, until the appendix is brought into view. The meso-appendix is ligated and incised. When the appendix is thus readily found, the problem is solved.

The position of the appendix is difficult to define. It may be attached to an old hernia sack, to the right ovary or the under surface of the liver. This latter condition the writer found in his 25th case. The work was much simplified by producing peristalsis by Morris's method of applying a minute quantity of sodium chlorid to the colon, which causes the peristaltic wave to run toward the appendix. Following this guide, the appendix was found adherent to the under surface of the liver. The adhesions were separated with the index finger, and the appendix removed.

When the cecum is surrounded with a pus sack, we usually find a perforated and sloughing appendix, which should be removed.

In another case the writer found the appendix detached and loose in the pus sack, the stump of which was later the source of a fecal fistula, which was successfully closed by a double row of Lembert sutures.

In still another class of cases, we find a large, hard mass of infectious exudate surrounding the appendix. It is all important to break through this mass, and remove the appendix. There is little danger from hemorrhage, it seldom occurs. This done, your patient is safe. It should be a fixed rule never to close up the incision without finding and removing the appendix,

otherwise your patient is in just as much danger as though the operation had not been performed.

Treatment of the Stump.—When the appendix is incised, the treatment of the stump resolves itself into the treatment of an intestinal perforation, which it in reality is. The surgical rules for the treatment of this condition should not be violated in treatment of the stump, viz.: Two infectious mucous surfaces should be turned in and not brought together, the object being to close the fistulous opening and prevent abdominal sepsis. Following these rules, one would suppose that all surgeons would adopt about the same method. On the contrary, Dr. Robt. H. M. Dawbarn of New York, says (May number of *International Journal of Surgery*, p. 139) that eleven different methods are in use by leading surgeons, all violating these rules to a greater or less degree.

The methods which have been most generally used, may be stated as follows: 1. Incising the muscular coat, and removing it. 2. Sterilizing the stump either by Paquelin cautery, or else chemically by fuming nitric acid, or rubbing with a bichlorid of mercury tablet, or applying a drop of carbolic acid. Whichever of the foregoing processes of disinfecting may have been adopted, they have been followed by the burial of the stump beneath the peritoneum of the cecum.

While these methods are popular, they are at variance with correct surgical principles, as they leave a point of infection in the peritoneal cavity, which will sooner or later prove a serious complication. As Dawbarn wisely says: "What would be thought of a surgeon who would treat a small penetrating wound of the gut by tying a string around it, leaving two foul and infected mucous surfaces tied together?"

The various chemicals used to disinfect the stump before burying it, cause a destruction of tissue. Hence, no healing can take place between two surfaces of dead tissue.

Dr. Dawbarn's method is surgically correct, and fulfills all the conditions with the greatest safety, and is the only method which should be used, the details of which are familiar, as they have been published in the journal referred to, and in others.

Closing the Incision.—In doing this important part of the work, we are justified in assuming that the various layers of tissue are arranged in the best possible order. We will respect the work of nature by leaving them as nearly as possible as we found them. We will return and pick up the "guy line" which we passed through the peritoneum when making the incision. By making gentle traction, the retracted peritoneum is brought into view in the upper angle of the incision. With a Martin needle loaded with No. 2 catgut, a stitch is easily passed through the free borders of the peritoneum and the edges drawn together. Remove the "guy line" and with a gentle traction on the last stitch enough of the peritoneum is drawn into the incision to easily take another stitch. This is continued until the peritoneal incision is closed by a continuous catgut suture. The transversalis fascia and transversalis and internal oblique aponeurosis is secured by a continuous suture, separately. The skin is put hard on the stretch by a tenaculum placed in the angle of the incision. The edges are united with No. 0 catgut in a fine needle, care being taken not to include any of the subcutaneous cellular tissues. This method restores the abdominal walls to their original firmness. I have not had a case of hernia following this method of closing the incision. The writer uses catgut throughout the entire operation. It is the ideal suture and ligature, if it is properly sterilized. This latter condition can only be secured by buying the raw catgut and doing your own sterilizing.

As an illustration of the advantage of the short incision, the writer gives the following case: Sept. 18, 1895, Mrs. C. M. C. consulted me relative to a severe pain in the right iliac region. She was three and a half months pregnant, aged 25, primipara. She gave the history of having had two distinct attacks before her marriage and pregnancy. Examination revealed great tenderness and pain over the appendix which could be distinctly felt as it was much enlarged. I advised an operation which was performed at Waternook Sanitarium, Sept. 24, 1895. The appendix was found to be much inflamed and was bound down by strong adhesions. The adhesions were broken up and the appendix removed. The stump was treated by Dawbarn's method. The incision was one and a half inches long. Patient made an excellent recovery and returned home in two weeks. I attended her at full time. She was delivered of an eight-pound daughter. The cicatrix did not yield perceptibly to the strain of pregnancy and parturition.

After-Treatment.—The patient is placed in bed, wrapped in a warm flannel blanket, with a hot water-bag at the feet. An enema of strong black coffee is administered in cases of much exhaustion. Small portions of hot water are given for the first twenty-four hours.

As we previously mentioned, we usually have an arrest of peristalsis following the operation. As a result, the bowels are greatly distended with gas, causing distressing colicky pains. Hypodermic injections of from 1-50 to 1-30 grain of strychnin are given once in four hours. This acts on the motor centers and hastens the return of peristalsis, with the result of throwing off the gas. Meanwhile, salol is administered to arrest fermentation.

When the bowel is distended for a long time the muscular coats become exhausted and the pain greatly increased. To guard against this condition, large injections of warm water are given per rectum; the gas escapes freely with the water, greatly to the relief of the patient, giving rest and relaxation to the muscular coats of the bowel. This flushing is repeated as often as it is necessary. By this treatment the colic period is shortened.

It is evident that the administration of an opiate is not a rational treatment for this condition. Opiates arrest peristalsis, the very condition we wish to overcome. Many deaths are no doubt due to the free use of opiates. A cathartic of magnesia sulphate is administered the following morning. When the bowels have moved freely, our patient goes on to a rapid convalescence.

In strongly septic cases due to pus, perforation, gangrene, etc., the wound is left wholly or partially open. A wick drainage of sterilized gauze wrapped around by gutta-percha, is inserted to the bottom of the wound. The gutta-percha covering prevents the granulations forming in the meshes of the gauze, rendering it so painful and difficult to remove. This drainage has a great advantage over the method of packing the wound with a large quantity of iodoform gauze.

The gauze, moistened with the saline solution, is

placed over the wound. The capillary attraction sucks up the serum, pus and other secretions through the wick drainage, sometimes in a large quantity. A layer of cotton is placed over all, and strapped down. The gauze should be removed in about twenty-four hours. A sterilized glass tube should be carefully inserted to the bottom of the wound, through which it is freely irrigated with the physiologic saline solution. This may be repeated three or four times daily. Hydrogen dioxid should be used once or twice a day to disinfect the wound. Following this treatment, at the end of a week, we usually have an aseptic condition. The patient goes on to good recovery.

When perforation is present, the bowel is frequently in such a softened and diseased condition that union will not take place if the perforation is closed. Many times by waiting a few months the coats of the intestine will have regained a healthy condition, so a successful operation can be performed. In other cases, a section of the bowel is in a gangrenous condition. Only one thing remains to be done: Remove the diseased section and unite the ends with the Murphy button.

Multiple Pus Sacks and other Complications.—We occasionally meet a class of cases characterized by a high grade of infection, multiple pus sacks rapidly forming with a gangrenous perforated appendix as the center of infection. It is this class of cases which tries the skill and courage of the operator. When the abdomen is opened, a most offensive pus flows freely. The appendix is firmly bound down in the pelvic cavity by strong adhesions. Around it is built the wall of the pus sack. The infection has spread beyond this, and other pus sacks are found. It is in this class of cases that we find a great diversity of opinion as to what should be done. We will quote what Gilbert Barling, M.B., F.R.C.S., Professor of Surgery in Mason's College, says (*British Medical Journal*, p. 1254): "When the pus is evacuated, the finger enters and searches for the appendix. It is often not recognizable, and if it is, it will almost certainly be firmly tied down by adhesions and no attempt should be made to remove it. Stripping out the appendix from the wall of the abscess is likely to break through the latter into the belly cavity, and lead to disaster. If the vermiform appendix is left, little anxiety need be felt as to future attack of appendicitis. They rarely occur."

Barling's opinion means, that little anxiety need be felt when we leave dead, decomposing, highly infectious animal tissue in the abdominal cavity. A more dangerous opinion could not be expressed.

I will relate a case which will illustrate the phase of the subject. It is one in which Dr. F. W. Chapin of Springfield, Mass., and myself were associated. At my request, Dr. Chapin operated, and I assisted him. The technique of the operation was the result of a mutual discussion of the case, and the writer assumes an equal responsibility. The lesson to be drawn from this case is too important to be omitted, as it embodied so many serious complications, viz.: pus, perforation, gangrene adhesions and secondary operation.

I first saw the patient, R. M. (a returned missionary), May 6, at my office. He had great pain and tenderness over the appendix. I advised an immediate operation, but the patient had a volume of reasons why it should not be done. Two days later there was a well-defined tumor at the McBurney point. I urged an operation, but without avail. May 10th the pain was severe, the tumor much increased in size. I then told him emphatically that I could only save his life by an operation. I was then moving my private hospital, and had no place to take him. Dr. Chapin kindly took him to a private hospital in Springfield. May 12 the operation was performed by Dr. Chapin. The incision was made over the tumor, a large abscess was opened and thoroughly irrigated with physiologic saline solution followed by the hydrogen dioxid. A fecal concretion was found in the pus cavity. We neither broke up the adhesions nor removed the appendix. A gauze drainage was introduced and dressings applied. The patient recovered and was out and attended to his work. The abdominal wound closed with granulations with a small fistulous opening remaining. A few days after the operation was performed, fecal matter escaped from the wound, showing that there was a perforation.

August 5, Mr. M., the patient, came to me in Hartford, with fecal matter and pus escaping from the fistulous opening in the abdomen. I sent him at once to Waternook Sanitarium where he was properly prepared. I operated on him the next morning. I made an elliptical incision around the cicatricial tissue resulting from the first healing. I found the portion of the abdominal wall thus removed, adherent to the cecum. These adhesions were broken up revealing a perforation in the cecum. This was closed by a double row of Lembert sutures. I then broke up many strong bands of adhesions in search of the appendix, which I finally found and removed. It was in a gangrenous condition, highly infectious. I then closed up the incision, leaving the wick drainage in the lower angle of the incision, which was removed on the second day and the wound closed. Everything went well until the tenth day, when the patient became feverish, with pain near the incision. A small abscess formed external to the superficial fascia, probably from the pus germs which had burrowed in the tissues near the fistulous opening. This discharged and readily healed. At the end of four weeks, patient was up and dressed.

In reviewing this case in the light of all that happened and my experience with many similar cases since, I would say that at the time of the primary operation I should have thoroughly broken up all adhesions, opened and disinfected the multiple pus sacks, which existed, searched and found the appendix and removed it, as no permanent cure could be looked for with this diseased and infectious animal tissue remaining in the abdominal cavity. When at the secondary operation I had found and removed the appendix, broken up the adhesions and thoroughly disinfected the abdominal cavity, I was sure of a permanent recovery. This is what I would advise in all similar cases, although eminent authorities advise to the contrary. There is a theory that the breaking up of the adhesions in pus cases, allows the pus to extravasate and infect the general peritoneal cavity. The fact is, the pus will pass out at the point of the least resistance, which is through the abdominal incision. Frequent irrigation with the use of hydrogen dioxid will render the septic condition aseptic, and a good recovery may be expected.

When the Operation Should be Performed.—In the discussion of this question, the writer will consider it from the standpoint of the best interest and safety of the patient, regardless of whims and sentimental notions.

W. Thornby Stokes, President of the Royal College

of Surgeons in Ireland, says (*British Medical Journal*, July 1, 1895): "As far as I am able to state my opinion on the matter, it is that, if an abscess has formed or perforation taken place, laparotomy should at once be resorted to, but that, short of these misfortunes, operations should be delayed until the last possible moment."

I find in the table of statistics of operations in St. George's Hospital, in London, by T. Holmes (*British Medical Journal*, July 6): Perforation of the Appendix, etc., 10 cases; recoveries 0, deaths 10.

This sums up President Stokes' opinion to mean: That the operation should not be performed at the time when there is a chance of saving the patient's life, but when death is inevitable, with or without operation, then "operate." The worthy president's opinion will insure a large death rate.

Now let us consider a case of a patient with the first attack of infectious appendicitis. He suffers considerable pain for three or four days, and will generally recover from this attack. If you operate, a short incision can be made. You will have no adhesions or complications. The appendix will be found to be slightly swollen and inflamed, but can be readily removed and the stump treated by Dawbarn's method, followed by little if any colic. In nine days he can sit up and in fourteen days go about his work. Now, if you slit open the appendix, you will find an inflamed spot, with probably a few drops of pus and considerable lymph thrown out. Here is the beginning of an interesting and probably an eventful history.

Now, to illustrate, suppose you did not operate. In a few weeks or months he has another attack, severer and longer, resulting in some adhesions. He may go on for two years with repeated attacks, more adhesions form, an invalid condition is well established, gangrene, pus and perforation may have taken place. You then operate under the most unfavorable conditions, with a long convalescence or death. Should not operative measures be an early consideration, rather than the last result?

My statistics covering one hundred cases, are as follows:

Cases without extensive adhesions, infected exudate masses or pus, 27, recoveries 27; cases with extensive adhesions, without infected exudate masses or pus, 25, recoveries 25; cases with infected exudate masses or pus, 23, recoveries 23; cases with infected exudate masses and pus, with perforation and gangrene, 25, recoveries 23, deaths 2; total number of cases, 100, recoveries 98, deaths 2. Males 64, females 36.

In conclusion, the lesson drawn from the proper appreciation of these statistics, contains an important point. We see that in classes first, second and third, no deaths occurred, but in the fourth class are two deaths. As has been stated, this class includes cases with *infected exudate masses and pus, with perforation and gangrene*. Now, with the results of an operation in this class lies the responsibility of the physician and surgeon who knowingly allows the patient to go on to the condition of this class, before an operation was performed.

DISCUSSION.

DR. PARKER, New Orleans—I have listened with much interest to the paper and congratulate the author on his brilliant results. It has been my fortune for the last seven years to be connected with the Charity Hospital of New Orleans where we have about ten thousand admissions annually and about twenty-four thousand at the out-door clinic. I have often wondered why it is that our friends in the North see so many cases of appendicitis and we so few. I do not believe we have seen half a dozen cases a year. Another peculiarity, they treat a great many negroes, but I have never seen a case of appendicitis in a negro. Dr. Johnson speaks of the catgut suture, but I believe the best suture is an absorbable one. I would like to know how he prepared this catgut. The author mentioned cases of abscess around the appendix and said he did not agree with the opinion expressed that the appendix should not be removed in these cases. In several of my cases, there were abscesses around the appendix and in some cases, the appendix was in the abscess wall. I believe that if we had started in to remove those appendices we would have opened the general peritoneal cavity. Instead of this we opened the abscesses and washed out the region with peroxid, all of the cases getting well and in not one of them has there been a recurrent attack. As to the use of opiates and salines, I believe in the way of preparatory treatment that it is a good plan to open the bowel with an enema and saline. We are all pretty well agreed as to the method of operating, but I do not believe in the use of opium. With regard to fecal fistulae, I have seen several cases. Some of them will heal up by themselves if you let them alone.

THE SECRETARY—The results secured by the author of the paper are almost unparalleled, and such statements coming from a man of such experience and with such good fortune or rather good technique must have a strong impression. Statements read from such a paper would probably be carried away from this section as the authoritative statements of this section and I feel they should be discussed. Another point, that of searching for the appendix in cases of abscess in every instance. I think this matter has been gone into by some of the best authorities. Having been a pupil of old Dr. Henry Parker, who was the pioneer in the advocation of opening appendiceal abscesses, I saw many abscesses which were undoubtedly what we would have called at that time perityphlitic, and I watched some of these cases for years. I do not remember of a single recurrence of appendicitis after the abscesses were opened and drained. It is a dangerous doctrine to set down any definite technique for any operation, and every case must be judged on its own merits. You might as well say treat all cases of pneumonia with the same drug. The external incision in some cases may be one inch, in others, two inches and sometimes from seven to eight inches, and this must be decided in every individual case according to the requirements of that case. Dr. Dawbarn's recommendation is an excellent one, but there are cases in which it is impracticable to use it. I recently had a case of recurrent appendicitis and I operated during the third attack. I found the appendix as large and hard as my little finger and it was perfectly indurated. The whole lumen of the appendix was destroyed and seemed to be replaced by an enormously indurated wall which was like a hard piece of rigid tube. It was thoroughly impracticable to have cut off that appendix and in such cases we must be guided by the case and not by any definite technique.

DR. CARPENTER, Kentucky—Each case is a law unto itself and must be treated in that way. As to suppurative appendicitis, we can not afford to tear up adhesions and run the risk of opening the peritoneal cavity and poisoning it. If we excise, irrigate and drain; we will save the case as a rule and I think many a patient is lost by meddlesome surgery. I recently operated on a patient in which the appendix was gangrenous and half sloughed off from the cecum. The cecum was gangrenous for about two inches and the appendix contained an appendolith. I removed this and cut off the gangrenous edges of the cecum. I employed the Lembert suture. I took the meso-appendix and brought it over, drained, irrigated and the patient recovered.

DR. MCRAE, Atlanta—I have only had a few cases. One of the points raised by Dr. Parker, I can answer in the affirmative, and that is that I have operated on two cases of appendicitis in the negro, one male and one female. It is true they had a little white blood in them, but they were negroes all the same. They both recovered. I believe that it would be one of the worst theories or practices to state that every appendix should be removed when it is contained in the abscess wall, and I am firmly convinced that it would be a very dangerous practice. I have read the works of many of the English surgeons and the universal experience seems to be that where there is a large abscess cavity with the appendix contained in the walls, simply draining is all that is necessary. It is the exception and not the rule for recurrence to take place. As Dr. Joseph Price has said, when you have a condition of that kind, the time for ideal surgery is not present and you simply wish to conserve the life of the patient. If it becomes necessary to remove the appendix later, I am satisfied that it could be done with less danger than by doing it at one sitting. A large proportion of those cases will die from septic peritonitis. I have had two cases of fecal

fistulae where the abscesses were drained after removal of appendix and one case in which I drained the abscess. If we let them alone, they will get well.

DR. ALEX. HUGH FERGUSON, of Chicago—I can not refrain from commenting on the surgical manner in which Dr. Parker made his remarks. I should like to be excused from discussing the paper as presented to us, but there are a number of points presented which to my mind are not the best procedures and I would like therefore to give a brief outline of how I manage cases myself. I have only had an experience of about 150 cases. I am surprised at the few cases that occur in the South and I think it must be due to the climate. The medical pictures that present themselves to us are, you might say, acute cases, and demand immediate operation. There are some cases which are not so severe, which recover and then have secondary attacks, and then there are others which return after operation when they have simply been drained. I have only had two cases of this myself. They were facsimilies of Dr. McRae's case where the appendix proper was obliterated, but there was a chronic abscess which would become full and cause an attack simulating appendicitis. The most favorable time to operate is between the attacks, and that old surgical rule is good. It is dangerous to operate during the acme of inflammation but sometimes we have to operate at this time, particularly when there is a tumor, otherwise we do not know whether it may or may not burst. The second most favorable time to operate is early, as soon as we have a clear clinical picture of a case of appendicitis, where it is evident that the inflammation is around the appendix. Early operation, say within twenty-four hours, is much more easily done, and the patient is much safer than if you leave it until the fourth or fifth day. The technique of operation varies. An inch and a half and a week and a half is wrong in 99 per cent. of the cases. You may do such an operation between the attacks where the inflammatory process is limited to the inside of the appendix. I once saw a surgeon who was fond of using that old expression, "an inch and a half and a week and a half," who went into the general peritoneal cavity by mistake. The technique of an operation between the attacks is clear. Select your incision and separate the fibers of the muscles. You then expose the appendix that has been inflamed in its quiescent state, and make a circular incision, tying off the mucous membrane, or as I prefer, inverting it by a figure of 8. A simple ligature over the muscular walls is the proper method to my mind. You can not always get your stump in good condition for this treatment but you should drain anyway. If you have to search for the appendix and break down adhesions, it is not necessary to drain. When there is no way of removing the appendix, as in appendicitis fibrosa or where we have much traumatism, capillary drainage is all that is needed. This will drain blood serum but not pus and that point should be looked after. We never aspirate unless the appendix is situated in a region which can be quite easily gotten at. There is no advantage in removing the appendix through the peritoneal cavity, and it is a very difficult way, but it should not be allowed to slough off. When it is in the pelvis, it should not be hunted for. Just as soon as you strike pus, drain it or mop it out. In draining, do so with gauze and with a tube, as gauze will not alone drain pus. The best drain with the gauze is a glass drainage tube, as a rubber one may become clogged up or may be pressed upon by the gas present. I was recently called to the case of a young man who had been riding a bicycle, and a few hours after having been thrown off, he complained of pain in the right iliac region. A physician had been called who diagnosed the case one of appendicitis. I was called about twenty-eight hours later, when the patient had a temperature of 103 and pulse 120. The abdomen was not very much distended but the muscles were rigid. An operation was agreed to and I cut down and removed the appendix, afterward packing with gauze and draining with a glass tube.

DR. HAINES, Omaha—I would like to congratulate the author upon his good paper. The first case I had was my most difficult one, and I found extensive adhesions in the right iliac fossa. After a long search I discovered quite a mass, and I felt the appendix within it. My case went the way of all flesh, but I believe if I had had the experience I now have, he would still be in the land of the living. I do not mean to say that it is always necessary to remove the appendix. It has been suggested to treat it as an abscess, which may be a good method. I live in an atmosphere that is impregnated with appendicitis, and we hear of dozens of cases in our local society every time we meet. It occurs in both races. I merely wish to condemn the routine practice of always searching for the appendix.

DR. JOHNSON (in closing the discussion)—I expected a discussion and am pleased to have gotten it. Perhaps I hold a unique position in this operation, as I have been both operator and patient. There is one thing about searching for the appendix. I have done this in the presence of as good surgeons as are here to-day and they have often warned me to discontinue my search. Where you have one large pus sac, you may drain, but almost invariably you will have multiple pus sacs. I find by breaking up the adhesions that you will find you will break into a pus sac just as you may open a wound. I have found as many as five pus sacs in one case, and if you leave these sacs I think they will do harm. Perhaps if some of you will just try the method of breaking up the wall of a pus sac, after you have broken up several, you will probably find others near by which will cause, upon rupture, quite a flow of pus. These sacs exist to a large extent, and have been found in the liver and in the whole abdominal cavity. Some patients have died without operation. When the appendix is situated, as it almost always is, in the wall of the pus sac, I remove the appendix. I am aware that you can mention good authority against this procedure, but my experience is that the pus will extravasate into the abdominal cavity and not come out through the incision. From my method I have never had a case of peritonitis resulting, and I think my procedure the proper one. You have a highly septic vegetable matter which it is dangerous to leave behind although I did not think so until I had passed a case where the appendix was removed in a secondary operation. Up to the present time I have had about 125 cases. I think I have seen a great many patients that would not have recovered merely by breaking up the pus sacs. I was sorry to note that Dr. Ferguson did not give any statistics. I would like to ask some of you to try my method. I have tried it although many men have told me not to do it. As to the length of the incision, I think it is often made too long, and a seven-inch incision should not be required in any case. It not only prolongs the operation, but there will certainly be an escape of the small intestines. My experience is that in most complicated cases an incision two or two and a half inches long is enough, and is sufficient to break up adhesions by the sense of touch. A surgeon once saw me operate and remove the appendix, and said he was unable to see or understand how I did it. I think the best way is to enlarge the incision if necessary and that in so doing you are considering the welfare of your patient. When you make a long incision a weakened abdominal wall is the result, and if the patient be a laboring man a strong abdominal wall is of great service to him. Experience soon enables one to perform this operation through a very small incision. If any of you will try this method, you will find that your result will justify you in doing it. The free use of boracic acid and hydrogen will save many cases, and I have been perfectly satisfied with my results. Physicians do wrong in allowing cases to go on before sending for a surgeon. The Dawbarn method can not be performed in every case, but where it can be, I think it should be as there are no infectious points left free in the abdominal cavity. When you first begin to employ this method, you will probably think you will not succeed, but it can be done in five minutes after you get used to it. With regard to fecal fistula, this will usually take care of itself. I remember one case in which the cecum was so far gone that it required a second operation. With regard to the employment of catgut, I buy it in the raw state and sterilize it myself. I first place it in ether and continue to change it until all the fat is taken out of it. I then boil it at a temperature of 173, and then put it away in sterilized glass jars. When I come to operate, I take out the size and quantity I want and again sterilize it. I have so far had no cause to regret its use.

A FEW RECENT CASES BEARING UPON THE QUESTION OF OPERATIVE INTERFERENCE IN ABDOMINAL AILMENTS.

Read in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association held at Atlanta, Ga., May 5-8, 1896.

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In the following brief paper my main object is of furnish the text for a discussion, by this Section, to one of the most anxious and difficult problems in practical surgery, namely the question of interference or non-interference in cases of abdominal ailment, traumatic or otherwise.

A few recent cases in my practice, together with one or two pathologic specimens, which I wish to present for your consideration, will I trust furnish a reasonable excuse for my occupying a few minutes of the time of this important and busy section of the AMERICAN MEDICAL ASSOCIATION.

So much has been said and written about laparotomy for diagnostic and curative puposes in numerous abdominal conditions that further argument on the subject may seem, to some, to be superfluous. But over and above the great crucial question of operative interference it is generally admitted that individual cases of disease or injury possess a certain amount and degree of scientific and practical interest which entitle them to a respectful hearing and an honorable place in the annals of surgical work. With this view I venture to present the following cases in the hope that at least some inspiration and practical instruction may be obtained from them for the benefit of others both in and out of the ranks of our profession.

Case 1.—Mrs. B. a very obese woman of 50, suffered from absolute obstruction of the bowels for ten days before I was called to see her; stercoraceous vomiting had existed for more than a week, and the patient was in a very advanced state of exhaustion, as may be supposed. The abdomen was tympanitic to the last degree. Temperature 104, pulse 140. The intellect was perfectly clear and by request of her husband and other friends, I explained to the patient herself, the desperate nature of her case and left the question of operation to her. She elected to take the slim chance offered by an operation and I at once proceeded to give the poor woman that chance.

As the result of a somewhat prolonged but most careful examination of the abdominal cavity, I finally succeeded in finding the large egg-shaped calculus which I here present. The intestine both above and below it was constricted so that it constituted a perfect obstruction. It could not be pushed either upward or downward more than one inch in either direction.

I made a small slit through the intestinal wall and removed it, closing up the wound most accurately by the classical suture. No douching was resorted to and the abdominal cavity was closed with all possible rapidity. The patient I regret to say, failed to rally and quietly sank and died in about twelve hours. If I had declined to operate (as I felt greatly inclined to do, owing to the lateness of my opportunity) and if an autopsy had been performed and this calculus found, I should undoubtedly have had serious difficulty with my conscience, one of the things that I greatly fear. Had I seen this patient a week, or a few days, earlier and had I proposed and been permitted an operation then, I can not help thinking, with very deep regret now, that the result would in all probability have been, instead of a melancholy failure, a most gratifying triumph.

Case 2.—C. E., aged 31, consulted me about the end of October, 1895. He gave the history of several well marked attacks of appendicitis, but was apparently quite well and engaged in active manual labor when he came to see me. He complained of a feeling of weakness in the right iliac region and said that he lived in continual dread of something "giving way" in that region. I detected a well marked swelling in the groin and taking the whole case into consideration, I advised an operation which the patient eagerly accepted.

I found the appendix distended with pus. On taking hold of it, which I did with a pair of forceps most gently, it separated from its very slim attachment to the cecum. Fortunately the parts were so thoroughly protected that not a single drop escaped into the peritoneal cavity.

On further investigation very extensive intestinal adhesions were encountered which it took a long and wearisome manipulation to disentangle and it was found necessary to sew up several large rents in the intestinal walls, each one of which just stopped short of perforation. This patient made a complete and rapid recovery for which we feel sincerely grateful. At the same time it is impossible to evade the reflection that an earlier operation would have proved much easier for the surgeon as well as vastly safer for the patient.

This case may in all fairness be taken as a representative of a considerable number which have occurred in recent times in my practice.

Case 3.—F. J., aged 19, consulted me on February 15, in regard to repeated attacks of appendicitis, only one of which had been severe, and that was more than a year ago. He presented the appearance of a perfectly healthy and vigorous young man, six feet high and weighing 170 pounds. I advised postponement of operative interference on account of his apparently perfect health. Next day, however, he returned in a very different condition, tongue furred, pulse 120, temperature 101. I had no choice but to change absolutely my view of his case and urge an immediate operation. As he was an only child and a young man of unusual promise, the responsibility was proportionately heavy. My advice was accepted and the operation performed. The appendix was found deeply imbedded in an immense inflammatory mass which surrounded the cecum and made the operation a most difficult and anxious procedure.

The testimony of this case could not be mistaken, that longer delay would have insured ever increasing danger to the patient, while an earlier operation would have been comparatively easy for the surgeon and much safer for the patient.

The following case is recorded here partly on account of its furnishing an additional argument in favor of early operation in *suitable* cases and partly on account of the very unusual and interesting complications which resulted from postponement of operative interference.

Case 4.—V. P., aged 40, a very powerful man, a blacksmith by trade, was taken suddenly and violently ill with all the characteristic signs and symptoms of appendicitis, including well marked swelling in the usual situation. He was attended by his regular medical adviser, who lived near him in the country. On the occasion of my first visit I found the patient in very great distress from constant cough with excessive expectoration of an indescribably fetid character. He had high temperature, rapid pulse, total loss of appetite, with proportionate general weakness. The swelling had entirely disappeared from the region of the appendix and he complained of pretty severe diarrhea. With all possible expedition I had him transferred from his home in the country to Harper Hospital in Detroit.

I suspected that an appendicitic abscess had burrowed behind the peritoneum and invaded the right lung, in short that nature was making an uphill struggle to get rid of the pus through the bronchial tubes. On this theory I ventured to make an incision between the sixth and seventh ribs on the right side and had the good fortune to tap at once the depot of fetid pus. Without resecting a rib I introduced the nozzle of the douche and washed out the abscess cavity thoroughly, with the greatest relief to the patient, whose condition immediately began to improve. The douching was repeated twice daily for about two weeks when all discharge having ceased, the drain tube was removed and the opening permitted to close. Three years have elapsed since this patient passed from my care, but I have met him quite recently, the very picture of manly health and vigor

Case 5.—J. Y. C., aged 35, riding bicycle between 5 and 6 P.M. Saturday, April 26, suddenly found himself in most dangerous proximity to an electric car. In his desperate effort to avoid the collision with the car, he unfortunately fell from his wheel and alighted on the asphalt pavement with very great force on his buttocks. He got up, however, and mounted his wheel and rode some distance. He then partook of a very liberal meal, after which he went in the company of a young lady friend to a pub-

lic entertainment, after which he accompanied her to her home. After parting with his young lady friend he started to go to his own home, but on the way was taken so ill that he stopped at a drug store and telephoned for my assistant, Dr. F. B. Tibbals, who at once responded and on hearing the history as stated above, administered an anodyne and accompanied the patient to his home and saw him comfortably to bed.

During the next day alarming symptoms very gradually developed and in the evening I was asked to see him. I found him very tympanitic, face pinched and pale, pule 120, temperature 102. Arrangements were instantly inaugurated for a laparotomy and the operation was performed at 10 P.M. It was a serious undertaking. The bowels distended to their utmost capacity with gas, the abdominal muscles tense and unyielding, the history and symptoms absolutely vague and indefinite. The patient and his family were candidly informed as to the essential danger and uncertainty of the case, but all were anxious that an operation should be performed. I have here, the specimen which explains the whole case, which in brief was this: An ancient ulcer of the stomach had induced a firm adhesion between the pyloric end of the stomach and the duodenal mesentery. The jar of the fall had had the effect of separating this adhesion and thereby caused a rupture of the stomach at the point of the ancient ulcer and consequent adhesion. I carefully stitched this rupture and with gallons of sterilized hot water washed from the peritoneal cavity all the foreign matters which had escaped from the stomach, after which I closed the abdominal incision. The whole procedure was conducted with the utmost possible expedition and during its performance every means of stimulation were resorted to, hypodermically and otherwise.

For some hours we had reason to hope that our forlorn hope might be crowned with success, but in spite of all effort the patient gradually sank and died about twenty hours after the operation. The case is a peculiar one from every point of view, and in my opinion serves to illustrate the value of early exploration and operation in cases of abdominal traumatism. More especially does this case serve to show the importance of careful examination and the value of the most trivial and apparently unimportant symptoms following an injury which, in its essential nature, ought to excite suspicion.

It seems proper to state here that in addition to the morbid condition of the stomach already described and which the specimen fully demonstrates, we also found an uncommon congenital condition. The left kidney was situated just below the promontory of the sacrum and was very small and very imperfectly developed. That this abnormality may have had some part in the fatal issue is in my opiniou reasonable to suppose. At any rate it is a fact that complete suppression of urine existed from the time of the accident to the end of the patient's life.

DISCUSSION.

DR. THOS. H. MANLEY, New York—I recently had a case that in some particulars was so much like Dr. MacLean's that I would like to mention it. I must take exception to some things generally considered important in reference to making an early incision. There are some cases I think of which an early laparotomy will throw but little if any light. The case I refer to was that of a young man who had been kicked by a horse. At the time of the accident he was pressed against the sharp edge of a feed pan. The shock was very great, and although he was able to raise himself, he only walked a short distance before collapsing. His family physician found him in a state of profound shock, perfectly rational but cold. By active measures reaction was brought about in twenty-four hours, during which time the patient did not pass a drop of urine. Shortly after the establishment of reaction vomiting commenced and an unquenchable thirst set in. I was sent for and made a careful examination of the case. As a result of auscultation of the abdomen and a very thorough examination I found evidence of internal hemorrhage. One would suppose that we should have had renal hemorrhage and not peritoneal. I ventured the diagnosis of laceration of the ileum. There was some intestinal trouble but I found evidence of intestinal peristalsis through the entire tract. I believed the peritonitis was due to the blood. Marked tympanites was present which subsided under treatment. On the fourth day, after everything seemed very encouraging, bad symptoms set in, the most serious of which was fecal vomiting. After placing the matter thoroughly before the family and warning them of the dangers and how little good could be promised, we opened the abdomen; the first thing I did was to go for the kidney on the right side but there was no kidney there. I then pressed my finger along the groin but there was no kidney there and I then thought of the horse shoe kidney. I found it lying over the cecum, and it was very large. I lifted up the bowel and about five feet from the duodenum I found two large gangrenous patches, one of which had just perforated. I was never more satisfied with the ease of an operation than I was in this case. My patient sank and died. Now the point is this. Suppose a laparotomy had been done immediately after the accident, what good would it have done? This point suggested itself to me particularly with reference to the displacement of the kidney. I have seen only two cases in my life of this curious and unusual state. It was a very interesting case and it taught me a great lesson. In these cases we must be guided by general principles and not by established lines.

THE PRESIDENT asked if the patient died in twelve hours from hemorrhage or from shock.

DR. MACLEAN said he did not think it was from hemorrhage. The gallstone was removed from the jejunum.

THE PRESIDENT—The *British Medical Journal* recently contained a report of a case of the removal of a stone about the size of the one removed in Dr. MacLean's case and the patient died on the third day from hemorrhage. I removed a stone larger than this about four months ago, the stone weighing 300 grains, and the patient died on the third day of hemorrhage.

DR. J. T. THOMAS, Pennsylvania—I rise to bring up the question of enteroliths, which is supposed to be a very simple matter. I would like to have the experience of the gentlemen present with regard to the result of these cases. A few years ago I saw a patient suffering with an obstruction resulting in fecal vomiting. Operation was declined until he was *in extremis*. On opening the abdomen and examining this obstruction an enterolith was found about the length of the one presented here, which entirely occluded the lumen of the intestine. It would be a very simple matter to remove an enterolith by incision. In this case the patient never rallied and he died in about two hours. From the case reported by the doctor and from my own case, I suspect that these cases are more fatal than is generally supposed.

DR. WINSLOW, Baltimore—As long as the gentleman who has just spoken has put a case before the meeting and as long as the result of these cases appears to be fatal, I would like to add my contribution of an equally fatal case of a similar nature. I was called a few years ago to a lady who had presented for three days symptoms of obstruction of the bowels. She had no very great pain, but had vomiting and persistent constipation, notwithstanding the administration of various remedies. The patient was 65 years of age and very fat. The abdomen was not very tympanitic, and the symptoms were those of intestinal obstruction. I proposed operation, which after some consideration was accepted. On opening the abdomen, to my surprise, complete intestinal obstruction was revealed, due to an object within the bowel. I had anticipated that the obstruction was due to a twist in the bowel, or perhaps to some malignant trouble which I could not feel through the abdomen. On making an opening, the mass proved to be a gallstone of about the size of the one referred to by Dr. MacLean. The woman died shortly after the operation. This brings me to a point which is perhaps well known, but which nevertheless can not be emphasized too often. In the vast majority of cases of symptoms of obstruction to the bowel it is impossible to know before opening the abdomen what is the nature of the mass within. Personally I find, in a large number of cases, that the condition present upon operation is very different from what you would imagine previous to the operation. I will mention another case which occurred two or three years ago. It was only possible to get a very meager history, as the man was a foreigner and could not speak English. He seemed to have been injured by the pressure of a car, and he complained of considerable pain in the abdomen and some vomiting. There were no other symptoms. After seeing him I left town and the following day was telegraphed for to return and operate on him. I found him in a bad condition and the symptoms already suggested peritonitis. There was no time lost in opening the abdomen, when the condition found was perhaps familiar to most of you, but was very interesting to me. It was very difficult to find the trouble, but after searching his abdomen and removing a large portion of the intestinal tract, I discovered a genuine hernia in a sac which was entirely within the peritoneal cavity. On lifting the intestine the bowel appeared to point into a sac behind the pubic bone, and this portion of the bowel

was entirely gangrenous. It is needless to say that he was beyond hope and that he could only live a day or so. The point was my surprise at the condition which I found upon opening the abdomen. The man who performed the postmortem overlooked the sac and I again examined the body to verify its existence. There was a distinct pouch which could contain six ounces of fluid. Other cases have come under my notice in which the condition found was very different from what had been expected, and it is well to emphasize that we can not tell what the pathologic condition will be until we have opened the abdomen.

DR. PHILIP MARVEL, Atlantic City—I wish to report a case which will be of interest from a surgical standpoint because of what did not exist. About six months ago I was summoned to see a lady who had fallen in a store, and who for ten hours had seemed to be in hysterical convulsions, which had recurred at intervals of about half an hour. Total suppression of urine existed from the time she was brought to me. Autopsy showed but one kidney, which was on the right side in the normal position. Examination showed a movable capsule and macroscopic and microscopic examination showed it was not diseased. From the time the lady was taken, when she was in perfect health, until the time of death, she was in a semi-conscious condition.

DR. MCRAE, Atlanta—I would like to mention one case in this connection which has been of great interest to me and which I have reported once before. I report it because of its extreme rarity and its medico-legal interest. The condition was due to a stab received between the sixth and seventh ribs six months prior to the time I saw the patient. When I saw him he had been suffering with intestinal obstruction for three days. The diagnosis made by the physician who was first called in attendance was that of cramp colic and he administered morphin. On the third day a consultation was held and it was thought that the patient had a hernia of the diaphragm The physician who had attended the man when he was first injured was then called in and he confirmed the diagnosis. I was telegraphed for to operate, and when I saw the man at nine in the evening he was in an extremely bad condition. He had a rapid pulse, a pinched expression and other symptoms. I stated the case very clearly to the physicians as well as to the gentleman himself, and I think the man really desired an operation because of its medico-legal interest, as he felt that he had been the subject of an unprovoked assault. He also felt that he was entitled to the bare chance that an operation would give him, but he desired to make his will, so the operation was postponed until next morning. Considering the condition in which I found him I think the ASSOCIATION will consider that it was not with a great deal of assurance that I went into the abdomen. I did so with much hesitation, as I believe up to that time no cases of operation for hernia of the diaphragm had been reported. There was an opening in the diaphragm, with a band of adhesive tissue extending up to the exact point where the stab wound was. At the point of the scar there was a tumor and it was impossible to draw the intestine down. It was clear that the man would die, and I felt justified in proceeding with an investigation of the case. I enlarged the opening in the diaphragm until I could put my hand into the left thoracic cavity. I found a portion of the small intestine in the pleural cavity and the lung was compressed. I kept on until I had removed the hernia. The adhesions were very dense. The condition of the bowel was one of beginning gangrene. The patient came out of the anesthesia and died about 5 o'clock. The interesting feature was the same as that mentioned by Dr. Ferguson. I placed my hands around the heart, which would continue to beat immediately upon being released. Another interesting point was my position on the stand. The man who did the cutting was declared not guilty.

DR. MACLEAN, in closing the discussion—If the result of my paper and the discussion is summed up in a single sentence, it is that the surgeon should have the courage of his conviction and should go boldly and honestly and sincerely before his patient and the friends and advocate an early exploratory operation. My case was lost for the want of early operation, and the same is true of all the cases of which we have heard to-night. The chances are reduced to a minimum by delay. I have this to say as my belief, and I am sure it will command the approval of others, that we should not hesitate or shrink from advocating an exploratory operation in all doubtful cases of abdominal trouble. Some of these cases get well of themselves, but for every one that does, ninety-nine do not. The object of my paper, and I think the lesson taught by this discussion is, that when we are brought face to face with an abdominal injury or an acute attack of abdominal inflammation, we should lay down the law with a degree of confidence that will convince our patient that operation is the right and only thing to do. If in my paper and in this discussion this lesson is impressed upon the members of this Section, I certainly shall feel that any little trouble to which I have been put has been repaid a thousand fold.

REPORT OF CASES ILLUSTRATING THE ADVANTAGES OF A NEW AND ORIGINAL METHOD OF OBTAINING MATERIAL FOR SKIN-GRAFTING.

Read in the Section on Surgery and Anatomy at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY Z. J. LUSK, M.D.

WARSAW, N. Y.

At the meeting of the New York State Medical Association on October 17, 1895, I read a paper describing a "new and original method of obtaining material for skin-grafting," reporting two cases in which it had been successfully employed.

The paper was subsequently published in the *Medical Record* Dec. 7, 1895, Vol. 48, page 800. It was illustrated with three cuts of Case I, showing his condition nine months after over 800 square inches of raw granulating surface had been healed. The accident which deprived this large surface of its integument occurred on Jan. 14, 1895, and was caused by patient falling into a pan of boiling brine at the salt works. His injuries were so severe and shock so profound that I did not think it possible for him to long survive. He rallied, however, and negatived my prognosis from day to day for four weeks, when I began to think the fellow had a possible chance of recovery.

I quote briefly from the paper published: "He was in a condition of extreme emaciation, with nearly one-fourth of the surface of the body in a raw granulating condition. Skin-grafting became necessary, and I was at a loss to know where material could be obtained sufficient to heal this enormous surface. No one could be found willing to contribute strips of skin required in the Thiersch method, and certainly none could be obtained from patient. Meantime, while reviewing the various methods employed in skin-grafting, an idea occurred to me, suggested by the numerous patches of exfoliated epithelium, the result of vesication; they were hard, dry and crisp, having been separated from the cutis now nearly five weeks. Believing that this material could be utilized, on February 16, in the presence of attendants and others, I did skin-grafting, using a patch of this dried epidermis adhering by one edge to dorsal surface of right foot. A piece about one inch square was softened and sterilized in a warm boric acid solution, and divided into twelve grafts which were applied to the anterior granulating surface of left thigh. The result was eminently satisfactory. Seven of the twelve grafts took nicely, developing into vigorous islands of skin. The subsequent treatment consisted in the use of this dried epithelial tissue, with which these large surfaces were covered with substantial skin by April 1. At the spring meeting of the Wyoming County Medical Association, Dr. Roswell Park, of Buffalo, New York, who was present as our guest, complimented me on my discovery, commenting particularly upon the integrity and firmness of the skin, the perfect use of joints, and the entire absence of cicatricial contraction."

At this meeting I expressed the opinion that epidermis raised by cantharides could be successfully

employed in skin-grafting. An opportunity of verifying this statement occurred three months later, when I successfully healed a large varicose ulcer of eight years' standing with grafts raised by vesication with cantharides. Since reporting my experience in October, 1895, I have done skin-grafting on the following cases:

Case 1.—M. C., Irishman, twenty-three years of age, saltlifter at Empire Salt works, slipped into a pan of boiling brine Dec. 23, 1895, severely scalding both legs, large blisters filled with coagulated serum covered dorsal surface of both feet. The epidermis on both legs was torn, hanging in shreds, with blood oozing from calf of left leg. Sloughing took place later, leaving a raw granulating surface five inches long by three wide, two inches above internal malleolus of left leg.

December 23 I did skin-grafting, using a patch of dried skin adhering by one edge to dorsal surface of right foot. The granulations were first thoroughly irrigated with warm sublimated solution followed with normal saline solution. The patch of epithelium was softened in warm solution of boric acid, and placed conveniently for cutting grafts. With a pair of common artery forceps, the skin was caught up at one corner and a narrow strip from one to two inches in length cut off and held with the free end resting at a point where a graft is to be applied. A piece about one-twelfth inch square is clipped off and carefully pressed into granulation; then it is moved from three-fourths to one inch where another graft is applied, and so on until a suitable number have been planted. A layer of sterilized gauze, saturated with a mixture composed of balsam of Peru and castor oil, in the proportion of one dram to the ounce, is applied over grafted surface, and over this three or four layers of sterilized cotton, which are held in place with strips of adhesive plaster and finally covered with a roller bandage.

In three or four days the condition of things can be easily ascertained by separating the cotton covering, which can be done without disturbing grafts. In this case dressings were not changed until the fourteenth day. A majority of the grafts had taken nicely, and on January 24 the surface was completely healed and he was up and about. On December 26, the date skin-grafting was done, I removed several patches of the dried epithelium, placed them between thin layers of borated cotton, tucked them into an envelope and laid them away in a drawer in my office desk to be tried on my next case of skin-grafting.

Case 2.—On January 7, I was called to attend F. H., German; while chopping wood, December 24, with a double bitted ax, it became set in the log, and in his efforts to liberate it, it flew out, striking the dorsal surface of right foot over tarso-metatarsal articulation, cutting a gash two and a half inches wide, paring off the skin for about two inches. Two weeks later, when I was called to see him, his foot was swollen with a surface two and a half inches wide by two inches long, covered with unhealthy granulations.

They were curetted and treated antiseptically, and on January 12, 1896, I did skin-grafting, using a patch of the dried epidermis taken from Case 1, as described. Twelve grafts were applied. Ten days later, when dressings were changed, six of the grafts had taken nicely At the next dressing two more appeared, making eight in all. The discharges had ceased altogether, and ten days later the wound was thoroughly healed.

Case 3.—Mrs. B., 48 years of age, cancer of left breast. I operated for its removal Jan. 26, 1896, leaving wound open except in axilla. February 3, there was a healthy granulating surface five and a half inches long by three wide in the center. A patch of cuticle was raised using for the first time a blister plaster called canthos, which is superior to anything of the kind I have tried, producing vesication in from one to three hours. In this case less than three hours sufficed to raise a blister three inches long by two wide, two inches from ant. sup. spinous process.

Care is necessary in removing the blistered cuticle, otherwise it may become wrinkled and ragged, being easily torn, making it difficult to determine the proper surface to be applied. It is easily removed after separating by carefully clipping around the edges; then covering with moist, sterilized gauze, when it is caught up by two edges, cuticle and gauze, and turned over so that its distal or outer surface rests on the gauze. The proximal surface is covered with the same material, the whole secured at each end by pins and placed in sterilized boric acid solution; after moisture is absorbed with sterilized cotton it is placed where grafts can be conveniently cut. The technique followed is the same as that employed in previous cases. About forty grafts were applied, a majority of which took nicely, and on March 6 this surface was healed with a covering of substantial skin.

Since the publication of my paper in December, 1895, clinical reports of the successful use of epidermis raised with cantharides have been published as follows: Dr. Leonard Freeman, of Denver, Col., (late Prof. of Surgery in the Woman's Medical College of Cincinnati), in a letter published in the *Medical Record* Jan. 25, 1896, claims to have done skin-grafting, using epidermis cut from a cantharides blister. His case was an aged darkey with an old crural ulcer, "probably syphilitic." He cut a plaster of appropriate size and left it on the man's thigh over night, when it was separated and transferred to the ulcer, on the surface of a pad of gauze. An attempt had been made to sterilize the ulcer with bichlorid compresses. He states that some suppuration occurred about the margins, but much to his surprise the graft "took nicely."

In a letter dated April 4, published in the same journal, page 499, Dr Frank Overton of Patchogue, New York (late surgeon of the City Hospital, New York), describes his experience as follows: Just above the angle of the jaw of a nervous girl, 17 years of age, there was an ulcer two inches in diameter, the result of curetting a wen Jan. 3, 1896. On January 10, granulations looked perfectly healthy, when a blister was raised by cantharides and two grafts applied, each the size of a thumb nail to the anterior part of the wound. Iodoform gauze dressing was applied to the wound. "On the 16th this was removed and with it one of the grafts. Another of the same size was raised and applied. On the 24th the area of the first graft seemed to be covered with epithelium, but thin. On the same day the lower part of the wound was grafted according to the Reverdin method, with four or five pieces of skin taken from the mother. On January 29, both the areas of blistered grafts looked healthy, and had nearly covered the ulcer, but those from the mother were growing far more rapidly than those from the blister."

Dr. Robert T. Morris of New York City, in his book just published on, "Appendicitis with Notes on other Subjects," has on page 151, a note headed "Skin-grafting from Blisters," in which he says: "Skin-grafts for application according to the method of Thiersch may be obtained from blisters;" that the idea of using grafts of this sort first occurred to him while treating burns in which large blebs had

formed. After securing and cleansing the separated cuticle in physiologic saline solution, it was replaced upon the sterilized wound where it adhered well. That since that time he had obtained blister grafts with cantharides and had successfully applied them to small wounds.

Just when the idea first occurred to the author or how long he has been doing skin-grafting by this method, is not stated. In his preface he mentions a list of periodicals in which he says, that the substance of many of the notes have appeared. Among the number mentioned I can find no reference to skin-grafting with blisters, hence I conclude that the first publication of his experience is that which appears in his book just published, 1896. It will be observed that in all cases reported, grafts of large size were used. In that of Dr. Freeman, cantharides was applied of appropriate size and allowed to remain until the following morning, when it was transferred directly to a septic surface and under these conditions "took nicely."

In Dr. Overton's case grafts no less than one-half, probably three-fourths inch square, were applied. Six days later one was removed with dressings when another of same size was applied, and finally developed into a healtny covering, by February first, twenty-one days after first graft was applied and fifteen days after second.

My experience with large grafts was invariably attended with negative results. With careful attention to asepsis, little septic blebs would lift the grafts in places, so that in changing dressings, if not removed, little evidence of life could be seen. Very often they will become disintegrated and disappear in the secretions. If on the eighth or tenth day pus is not materially lessened in quantity, you may be pretty sure that your grafts are a failure. On the contrary, if the secretions are materially augmented, you may be satisfied that grafts have taken and are doing well. Grafts not larger than one-twelfth inch square when properly applied nearly always take nicely. On the tenth or twelfth day the grafted surface will be studded with numerous depressions surrounded with atrophied granulations and from this time their growth is surprisingly rapid. The epidermis raised with cantharides is less porous than that separated by the knife according to the Thiersch method. I am convinced that the method of applying dressings, permitting frequent examinations without disturbing proximal covering and the application of the aseptic mixture is followed with better results on granulating surfaces than the so-called dry dressings.

Various experiments have been made to ascertain the limit of vitality of grafts separated from the body. The longest period of which I can find any record is ninety-six hours.[1] In my first case, I successfully healed a granulating surface three and one-half inches in diameter with grafts which had been separated from the body forty-eight days. In the case reported by Dr. Freeman, the cantharides plaster was attached to the cuticle from twelve to fourteen hours, which demonstrates one important fact in connection with the cuticular epithelium and that is, that it will undergo any treatment short of total annihilation and yet, when returned to its natural environment, it will become revitalized and awakened into new life and activity.

[1] Georges Martin, Encyclopedia of Surgery, Vol. I, p. 543.

What are the advantages of this method as compared with those generally employed? 1. By the Thiersch method the operation by which material is obtained is exceedingly painful, so much so that in cases weakened by their injuries and especially in children, the surgeon has to seek kind and obliging friends of his patients in order to obtain the necessary grafts. Such friends, as a rule, are very scarce under these circumstances. 2. The technique requires the skilled operator to properly cut or shave off the grafts. There is also the danger of transmitting syphilis or other infectious diseases. The same objection would apply to the Reverdin method, though to a less degree, being less painful.

By the method which I have described, the advantages are: 1. The material for grafting can be obtained from the patient *per se*, without causing pain or discomfort, with the danger of transmitting syphilis or other diseases eliminated. 2. The technique is simple. A surgeon or general practitioner with a knowledge of antiseptics and ordinary surgical skill can successfully operate. 3. It is quite as potent in healing wounds of large size more rapidly and with results as perfect as by any method known, the skin produced being soft and pliable with no keloidal cords and in many places so natural that it can scarcely be distinguished from normal skin.

A SAFE METHOD BY WHICH ANESTHETICS MAY BE ADMINISTERED WITH OXYGEN.

Read in the Section on Surgery and Anatomy, at the Forty-seventh Annual Meeting of the American Medical Association at Atlanta, Georgia, May 5-8, 1896.

BY J. N. DEHART, M.D.

BROOKLYN, N. Y.

Since the discovery of the application of ether by Dr. Morton, of Boston, and its first use in the Massachusetts General Hospital by the late Dr. J. C. Warren as an anesthetic in 1846, there has been a great desire that some means should be devised by which all danger might be allayed, so that the patient could not be rendered cyanotic, especially when there was disease of the heart or kidneys that complicated the patient's condition. While ether has had the preference to chloroform in our country, yet in Europe the latter has been more universally used, and at the present day is also being adopted for anesthetic purposes in many private sanitariums, either alone or in the A. C. E. mixture.

Among the advantages derived from the use of chloroform are that it requires a much smaller amount to produce anesthesia, the patient becomes unconscious more rapidly and there is less bronchial irritation and excitability, there is a more prompt return to consciousness and hence less unpleasant effects afterward; all of which are worthy of consideration, and with care on the part of the person administering the anesthetic would tend to lessen the mortality in such cases where chloroform was used.

Since the early part of last year many surgeons in various cities of the United States have been devising means by which anesthetics could be given with oxygen gas during surgical operations. The most important factor in this mode of giving them was a properly constructed inhaler, by which the patient could breathe the anesthetic with oxygen gas and at the same time expire the carbonic acid gas; the latter would often cause cyanosis and also nausea when given in the usual way with a cone.

Having observed the giving of anesthetics with oxygen in a few cases during an extensive tour of the Northwest and South last spring and summer, and my attention having been called to the need of a properly constructed inhaler for this purpose, in December last at the request of several surgeons to whom I had related what I had already observed, and they having expressed a desire to give oxygen gas a fair trial with anesthetics, I visited several surgical instrument establishments and after carefully examining the various inhalers in them, I saw what seemed to me would make a practical one, and began devising designs for this purpose. I think that I have had constructed such an inhaler, which has been used in over one hundred cases in the various hospitals of Brooklyn, New York city, Boston and vicinity by myself, and I can safely say that it has been used since Jan. 1, 1896, over five hundred times by the surgeons of these hospitals, and also in the private hospitals and practice of many others.

The illustration which accompanies this paper shows the inhaler adjusted for immediate use. It consists of a nickel-plated mask with a rubber face guard and valve for expired air. This valve is made of two metal discs, between which is placed a rubber disc. These are enclosed in a nickel-plated box with

a movable cover and slot for expired air. This mask is connected with a graduated bottle with metal cap and two nickel-plated tubes. The long one contains two small brass nebulizing tubes, so that the anesthetic is carried over to the patient as a fine vapor. This bottle is connected with the cylinder containing the oxygen, which supplies the pressure and should be allowed to flow slowly into the bottle. Another mask made of vulcanized rubber with nickel-plated frame and nickel-plated box, containing a metal disc, secured by a movable pin, and underneath it having a rubber disc for expired air, is also made. This mask is connected with a larger graduated bottle and two hard-rubber tubes, the long one having two platinum points for nebulizing the anesthetics. This bottle is also connected with the cylinder containing the oxygen gas. A double air bulb can be used with either of the masks and bottles, when the oxygen gas gives out during a surgical operation, or if it can not be obtained in cases of emergency.

At the suggestion of a prominent surgeon I made a small box and attached it to the rubber mask and placed a sponge in it on which ether, chloroform or A. C. E. mixture can be dropped and rapid etherization produced in minor surgical operations and obstetric cases.

The advantages derived from using anesthetics with oxygen gas are:

1. That there is seldom or never any period of excitement during the early administration of the anesthetic.

2. There is no nausea nor vomiting nor cyanosis at any time while giving the anesthetic, either in the early stage or during the operation, except in cases where brandy may have been given for a stimulant either before or during the operation.

3. The patients are more readily restored to consciousness than when anesthetics are given alone and make a more rapid recovery.

4. A much smaller amount of the anesthetic is used, usually about one-third the quantity, and seldom more than three or three and one-half ounces of ether per hour and the same proportion of chloroform or A. C. E. mixture.

Through the courtesy of several surgeons in Boston, New York, Brooklyn, Albany and other suburban cities I am enabled to report a few of the more interesting cases where my inhaler was used with anesthetics combined with oxygen gas.

Case 1.—F., aged 40, Dr. Charles McBurney, Roosevelt Hospital; carcinoma of left breast. Ether with oxygen gas (dilute). Patient came under the anesthetic very slowly and was removed to the operating room in a few minutes after etherization was commenced. A small nodule about the size of a walnut was found just below the nipple in left breast, which had been developing for some months past, and recently had become quite painful on pressure and at times sharp pains radiated from it in different directions. Have no knowledge of any hereditary taint in any members of her family, either on father's or mother's side. This was dissected out and wound dressed antiseptically in thirty-five minutes. Two and a half ounces of ether was used and about ten gallons of oxygen (dilute). There was no nausea nor cyanosis during the entire operation, and patient recovered consciousness soon after leaving the operating room.

Case 2.—F., aged 35; Dr. G. R. Fowler, Brooklyn Hospital; carcinoma of right breast. No family history was obtained at the time of the operation nor afterward. Ether with oxygen (dilute) was given to the patient and she came under its influence in seven minutes without any nausea or cyanosis or excitement, passing from first to second stage and then to complete anesthesia. The entire breast was removed, as the carcinoma involved almost the whole glandular structure and would soon have broken down. There was very slight hemorrhage and but few vessels were ligated. Afterward the pectoral major muscle was also dissected off, as it was thought best to do so, lest the carcinoma had also affected a portion of it. The axillary glands were also removed. The wounds were then dressed antiseptically and catgut sutures were used to approximate the edges of the wound, and iodoform gauze and bandages were applied to the chest.

No nausea, no vomiting nor cyanosis during entire operation, which lasted one hour. Four ounces of ether and twenty gallons of oxygen (dilute) were used. Patient became conscious before leaving operating room.

Case 3.—F., aged 32; Dr. Picher-Seneg, Memorial Hospital, Brooklyn, N. Y., section of trifacial nerve. This patient has had a persistent neuralgia for a long time past and been under the care of several surgeons, who could not afford much relief by any medical treatment short of a surgical operation, which she finally consented to have performed. Had an exploratory operation a few days since, in which an incision was made through the integument covering cheek and eyelids, about two and one-half inches in length, and closed with adhesive straps until to-day, when it was opened and continued underneath the superior maxillary bone. Chloroform with oxygen (dilute) was given and patient yielded to its anesthetic effect in three and one-half minutes. No excitability, nausea nor vomiting or cyanosis during the entire operation, which lasted one hour and fifteen minutes and consumed one ounce chloroform and fifteen gallons oxygen.

Case 4.—M., aged 68, Hebrew; Dr. G. R. Fowler, Brooklyn Hospital: supra-pubic cystotomy. Chloroform with atmospheric air was given by means of a double air bulb, the supply of oxygen (dilute) which the hospital always keeps on hand, having been exhausted by two cases of asphyxia from illuminating gas which came in during the previous night. Patient came under the anesthetic effect of the chloroform very readily

in four minutes without any excitement, nausea or vomiting, and passed rapidly to an unconscious condition. An incision two and one-half inches long was made along the median line and above the pubic region. A careful dissection through the abdominal wall exposed the bladder to view, a sound having been previously introduced into the bladder and held by an assistant, an incision was made through the parietes of the bladder and a careful exploration made of its contents. An encephaloid was found and a mass that would fill a dessert spoon removed with a curette, after introducing it several times. The bladder was then carefully washed out with antiseptics and incised wound closed with sutures. There was very little hemorrhage during the operation. Iodoform gauze and bandages were applied and patient removed from operating table to his room, when consciousness was restored. There was no cyanosis nor vomiting during the operation, which occupied forty-five minutes, and three ounces of chloroform were consumed. The pulse, temperature and respiration were normal during the entire operation, a gum elastic catheter (large size) was passed through an incision made in the perineum and upward into the bladder and secured there for drainage.

Case 5.—M., aged 48; Dr. McDonald, Albany Hospital, N. Y.: anchylosis of left knee-joint with bad union of fracture. Was kicked by a horse some time since and had acute synovitis, followed by this deformity of the limb. A. C. E. mixture was given with oxygen. Patient came under its anesthetic influence in four minutes and passed from first to second stage without any excitement or nausea. Partial resection was made of upper end of tibia. Adhesions were loosened and bone broken over again as near former fracture as possible, so that there was good motion of the joint obtained, which would enable the patient on recovery to walk with only a slight limping gait. The limb was then flexed and dressed with plaster paris bandages and an angular wooden splint secured underneath the knee-joint. Pulse and respiration good through entire operation, which occupied one hour. Esmarch bandage was first applied to aid in controlling any hemorrhage, and it was very slight, during the operation only a few ligatures being required.

Case 6.—F., aged 24: Dr. A. Vandereed, Albany Hospital: necrosis of nearly two-thirds of right femur, with anchylosis and distortion of knee-joint. Ether with oxygen (pure) was given and patient yielded to its influence in five minutes, passing rapidly to an unconscious condition. Esmarch bandage was first applied to control hemorrhage, and amputation of limb was made at upper third of femur by a flap operation. After ligating blood vessels and washing the stump antiseptically it was found necessary to remove another inch of the femur, as it was found to be necrosed farther up than the external appearance of the limb would indicate. Pulse and respiration normal during the entire operation, which lasted fifty minutes. There was no nausea, vomiting nor cyanosis at any time. Glass drainage tube was inserted.

Case 7.—F., aged 40, weight 121 pounds; Dr. Kittredge, of Nashua, N. H., was the family physician. Dr. Irish, of Lowell, performed operation for resection of ribs on right side. Patient had an attack of pleuro-pneumonia, followed by effusion in the chest. The usual remedies had been tried but failed to absorb the fluid. The failing health of the patient, with symptoms of pyemia necessitated resection of ribs on right side in order to get good drainage. A. C. E. mixture with oxygen (dilute) was given and patient yielded rather slowly to its effects. There was no nausea or cyanosis and patient passed to an unconscious state in ten minutes, showing how non-susceptible some are to the anesthetics, no matter which are used. After removing a section of rib and enlarging the opening, there was a very abundant flow of very foul-smelling and flocculent fluid to the amount of twelve or fourteen ounces. A drainage tube was inserted after the cavity had been thoroughly washed with a solution of salt and water, and afterward with a weak solution of peroxid of hydrogen. Patient has improved, for the past week in good health, and there is continued flow of fluid through drainage tube, but does not have such a bad odor as formerly.

Case 8.—F., aged 35, laparotomy; Dr. Wm. M. Conant, Boston, Mass. This patient has had pain in right side and also in lumbar region of same side for some months past. There has been some swelling and tenderness on pressure recently in same locality. Has not made the usual quantity of urine for several weeks past and there has been partial suppression at times, which necessitated catheterization. A careful diagnosis led to the belief that the kidney was involved and also the right ovary. Ether was given alone at first and on my arrival the vomiting was so persistent and the operation had been interrupted so many times that I was requested to give oxygen, which checked the vomiting in a very few moments. The operation was then resumed and was very soon terminated, without any more vomiting. An incision about three inches long was made through the abdominal wall and over the right ovary and a careful dissection revealed a cystic ovary, which was removed and ligaments secured with catgut sutures. A further exploration was made and the right kidney was found to be encysted throughout and nothing left of it but a mere shell. This was also removed and the arteries, etc., ligated. The hemorrhage was quite free and continued for some time from some small arteries, requiring a further ligation of some that appeared at first would not require it. The abdomen was then washed out antiseptically, and wound closed with catgut sutures. Iodoform gauze, adhesive plaster and bandages were applied and patient was removed to her room. Oxygen was also used to resuscitate this patient after the operation. She made a good recovery and had no vomiting during her convalescence, nor other unfavorable symptoms.

DISCUSSION.

DR. MCHATTON, Macon, Ga.—I think this question of anesthesia is a very important one and there are many different methods of administering them. Anesthesia is always dangerous and I prefer to use either chloroform or ether alone, as when we mix the two, new dangers arise which we can not ascribe to either one. I am rather afraid of the A. C. E. mixture.

DR. HAINES, Cincinnati—I think the point is well taken by the last speaker and I believe it is the general opinion, *i. e.*, that one or the other should be employed by itself. Personally I prefer chloroform. I have seen chloroform administered by midwives, nurses and husbands, and I consider this a practice to be deprecated. When we consider the few deaths as compared with the large number of cases anesthetized daily, I can not but think chloroform is the safest if you can get it pure.

The Secretary, DR. W. L. ESTES—Anything that will add to the safety and to the relief of the burden on the surgeon should be welcomed by the whole profession. The author desires to change the title of his paper, and as he now calls it a safe method it makes it very suggestive. If it is a safe method, it is a great boon. We have often heard of safe methods; for example, anesthesia by direction and the employment of various inhalers. We have begun to question the value of any one appliance or remedy for the administration of the anesthetics. It seems to me that it is the administrator that is the actual actor in the giving which is the safeguard. I think the manner employed in America generally in the giving of anesthetics is to be deprecated, as in most hospitals it is the custom for the general assistant to give it. We all know that if one act in the operation is of importance and requires skill it is the giving of the anesthetic. In England professionals are employed to do this work and nothing else; even there, almost every week we hear of deaths, and if this is true under such circumstances, there must be something in the agent we use which is dangerous. If the reader has introduced something which is absolutely safe, if it be true that oxygen renders it safe, he has, indeed, conferred a boon. One thing that increases this danger is the inhaler, and the one which admits of the greatest quantity of fresh air, I should think, would be the one to use. If the author can prove his theory, it is something which will redound to his credit and others who have suggested it. If he can give us something practicable which can be carried around to every case, it is, indeed, a step in advance. The idiosyncrasies and diseases of the patient should be considered first, and secondly the skill and experience of the operator.

DR. HALL, Milwaukee—There are indications for the use of chloroform and vice versa that are unmistakable and which manifest themselves throughout the time of the action of the anesthetic. I would suggest that a thorough examination before the anesthetic be given would indicate which anesthetic is best and when, if at all, it is advisable to change it. Ether in this country has a reputation for being a very safe anesthetic, and in other places chloroform is so generally used that in the ordinary shop and drug stores ether can not be obtained. This shows narrow-mindedness on the part of the profession. I would say that ether is far mone dangerous than chloroform. In the one instance death occurs immediately, while in the other it may take place long after the patient has apparently recovered. The mixture of the natural atmosphere, of course, is a very prominent factor in the safety of the administration. I would like to raise the point that in giving chloroform it is not well to give too much oxygen. The one who has charge of this anesthetic should bring the

patient well under, until a condition between the second and third stage is reached, and hold him there. In that condition it is far less dangerous and there is much less danger of spasmodic contraction of the muscles.

DR. J. MCFADDEN GASTON, Atlanta—I have had a somewhat peculiar experience in connection with anesthesia. Recently in preparing for laparotomy, I observed in my bag a vial, presumably containing 25 per cent. solution of the A.C.E. mixture, which turned out to be carbolic acid and alcohol. The person giving the anesthetic experienced considerable difficulty until it was found where the mistake was. The hands became swollen and the lips were considerably burned. I expected my patient would suffer some inconvenience as the result of this mistake, but she did not. A preparation that I have employed for fifteen years, and which I have found free from danger, is alcohol one part, chloroform two parts, and ether three parts. My anesthetic in former years was chloroform. In speaking of oxygen, if you observe the blood when under the influence of chloroform, the arterial blood will be found of the color of the venous blood. I only know of one instance in which my mixture was fatal and this was in the case of a child who insisted on its being administered every day for a month when changing a dressing. In undertaking to operate in a case of ulceration of the bowel, in which there was marked contraction of the sphincter, I desired to dilate. How far the condition may have been aggravated I do not know, but in the midst of the dilation, there was very difficult breathing and suddenly the patient succumbed. This is the first case of fatal result that I have ever witnessed and I consider it a very serious experience. Some of you may have noticed, the other day, that one of our leading surgeons in Tennessee was arraigned before the court for malpractice for the death of a patient during the administration of an anesthetic, but the court said there was no ground for action. I am not quite sure where we should stand in giving out death certificates in these cases and I should be much puzzled.

DR. J. N. DEHART (closing the discussion)—Many cases of the use of my method have been reported and it is now being employed in over fifty hospitals. It was recently used in a case reported in New York, in which the patient recovered one hour sooner than usual. I have employed chloroform in cases of heart trouble and the patient has been under the influence two and a half hours. The pulse was 114 to 120 for six weeks and at the end of the first hour the pulse had risen to 160. I used oxygen for five minutes and the pulse came down to 145. I gave one-sixtieth of a grain of strychnia and resumed the anesthetic. At the end of one and a half hours the pulse was again 160. I gave oxygen again for ten minutes and it came down to 145. It subsequently rose again to 168. The woman lived for six days and subsequently died of peritonitis, although it was declared at the time of the operation that she could not live through it.

SOME GENERAL CONSIDERATIONS IN RELATION TO THE NATURE AND TREATMENT OF DISEASE.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY LOUIS BALMAT BAKER, M.D.

ERIE, PA.

"Flower in the crannied wall,
I pluck you out of the crannies;
Hold you here, root and all, in my hand,
Little flower—but if I could understand
What you are, root and all, and all in all,
I should know what God and man is."

How profoundly true this is! Given one fact and you have the key to the universe, a formula that can solve all problems, a talisman that will open all the arcana of nature. Be faithful to your one fact and it becomes an unfailing test for truth, for nothing that contradicts it, can be true. An isolated fact is an impossibility. Conditions that are unvarying and know no shadow of turning, relate your one fact to all the other facts in nature. And these laws and relations are constant; the same yesterday, to-day and forever. To believe that nature is fickle and capricious, doing a certain thing under definite conditions, one way to-day and another way to-morrow, is to be left utterly without a guide. There remains nothing on which to depend. It is to be given over to "permanent intellectual confusion." Much of the false reasoning in philosophy and theology, as well as in science, has arisen from infidelity to this great principle, this sure and firm foundation of all correct deduction. The law of gravitation is no more sure and constant, than the laws that rule in the mineral and organic worlds. The crystal forms along definite lines of cleavage, always in the same way under the same conditions; the seed germinates and bursts into bloom and beauty; the bird soars and sings;—all in strict accord with the laws that rule their life and growth. That the gem sparkles, the flower blooms and the bird sings, means simply that they have obeyed the laws of their being.

Let us take the flower, "root and all, and all in all," and see if it will tell its secret. What are the conditions, in obedience to which it has reached its full perfection? First the seed, with its marvelous potentialities, is placed in the soil. It absorbs moisture, swells, bursts its tiny envelope, sends forth its delicate roots in search of food, and presently shoots the green stem above the surface; it unfolds its leaves to the sun, bathes in its warmth, drinks of the rain and the dew, fashions the tender bud and finally shows its full perfection in the beautiful flower.

The conditions that have to do with the proper development of the plant, are mainly six: Light, air, moisture, warmth, suitable soil and protection from parasites.

Light.—Witness the pale and sickly sprout in the dark cellar; the marvelous chemistry of the sunbeam is essential to life.

Air.—Place a plant under a glass receiver, exhaust the air, and it speedily dies. A vacuum would be no less fatal to animal life.

Moisture.—Instance, the Sahara.

Warmth.—The Arctics are as bare of vegetation as the desert.

Suitable Soil.—The food supply; this is of vital importance.

Protection from Parasites.—If a blight attacks the crops or work havoc among the fruit trees, the intelligent farmer no longer attributes it to a mysterious dispensation of Providence. He attacks the invading army of parasites with fire and poison and drives it from the field. Patient investigation, chemic analysis of the plant and of the soil, repeated and faithful observations and experiments, have made agriculture something of a science.

Given a sickly, stunted, imperfect plant, and we know at once that some of the conditions vital to its growth have been violated. The wise gardener seeks to know what condition has been violated; his treatment consists in the correction of the violated condition, and it is simple and rational, the logical sequence of cause and effect. In a word, the scientific method is applied to the study of the nature, structure and conditions of growth of the normal and healthy plant and the treatment of the abnormal bears a strict and definite relation to what has been learned of the normal.

A plea is made for the application of the same method in the domain of medicine. The subject is vastly more complex and difficult, but the principle is the same.

Given a weak, diseased and imperfect man. How is it with us? What is our thought of his condition,

and our idea of treatment? Who of us would be willing to admit how large a part of his treatment is purely traditional, and is based upon the conception that disease is a subtle and mysterious entity or essence, an evil spirit, a foul humor, that exists independent of the body, and is not subject to the ordinary laws of force or matter? A something that exists in such form that on a certain occasion, it was driven out of the body of a man into a drove of swine, causing them to run violently down a hill and drown themselves in the sea.

Is not this still the popular view of the matter? Do not 90 per cent. of the people we meet have some such conception of the nature of disease?

"Doctor, I have this or that disease; what is good for it?" is a daily question. The patent medicine man counts upon this belief with absolute certainty and reaps his harvest of dollars. The Indian medicine man, practicing his fearful incantations, is in accord with this theory; and as a piece of the same philosophy applied to astronomy, we have the tales of how eclipses and comets are made to flee before the dreadful din of the Chinese tom-tom.

But we no longer consult the astrologer in regard to the stars. Copernicus made his occupation an absurdity. The telescope has replaced the horoscope. The weird alchemist bending over the alembic, seeking and ever seeking to transmute the baser metals into gold, and to fabricate the mysterious elixir of life, stands in sharp contrast with a master of modern chemistry. Lavoisier placed alchemy among the mythologies. Copernicus, in establishing the heliocentric theory in the place of the geocentric, readjusted the intellectual outlook of all the philosophers. Lavoisier, in the discovery of oxygen, laid the foundation of the most exact of all the sciences, and the immortal Harvey in 1628, when he discovered the circulation of the blood, gave to our profession a like master thought.

That view of disease which regards it as something extraneous and unrelated, is the historic and philosophic equivalent of astrology and alchemy. It represents the medical aspect of the tendency, universal among all primitive peoples, to personify all the powers of the earth, sky and sea.

It is not contended that modern intelligent medical men base their conception of disease on this theory; and for that very reason a protest is entered against a therapeusis that is based upon it, and that has no possible explanation aside from such a conception. The protest is directed against that form of therapeutics which consists in the indefinite, promiscuous, internal, external and eternal administration of drugs, to the almost total neglect of sanitation and hygiene.

Drugs have their proper use and there is no disposition to underrate the benefit derived from them, but most assuredly they have their abuse. Four or five thousand remedies! What an appalling and ever increasing list! Reserve twenty-five or thirty of them and the remark of Dr. Holmes will truthfully apply to the remainder, "that if medicines were cast into the sea, it would be better for mankind and worse for the fishes."

Health means sound structure and normal function. As with the plant so with the man, the law of life is the same. Health, mental, physical and moral, depends upon obedience to law. Disease means transgression. Nature's laws operate along straight lines. The life that is ordered parallel to these lines is safe. He who crosses them is pierced. Nature is impartial and merciless. She does not contemplate the individual, but the race, hence the awful fact of heredity, so splendid in the right direction, so terrible in the wrong.

The best physicians are those who have the keenest eye for bad surroundings and hurtful habits, and they use the fewest medicines. Doctor and doper are not necessarily synonymous terms.

Is it not true of us as a profession, that we have depended too much upon drugs? Are we not quite easily convinced that we have done our entire duty to our patient, when we have prescribed the medicine best calculated to relieve the diseased condition?

To illustrate: Miss C., student at a fashionable boarding school, a young lady broken in health by an artificial life and wrong methods of education, comes to us. We know the whole story before she has said a word. Anemia, dyspepsia, neuralgia, palpitation, dysmenorrhea, constipation, insomnia and headache are the prominent factors in the case. Shall we rely upon iron, arsenic, strychnia, cod-liver oil, pepsin, hydrochloric acid, strophanthus, nitro-glycerin, digitalis, aloes, jalap, cascara, bromid of potassium, chloral, belladonna and opium, and so on ad infinitum? And that headache!

> Drugs galore, some fifty or more,
> And still the head aches to distraction,
> The eyes! did you say? I'll try anyway,
> It yields to a proper refraction.

To dismiss such a patient with a fine Latin prescription calling for some of these drugs or a combination of them, is not to meet the indications. Is it not vastly more important than any or all medicines you may use, to insist upon it that your patient obeys the following rules, briefly:

Proper food, with all that is implied as to quality, quantity and regularity of meals.

Exercise, systematic, in the open air, plenty of it; walking, riding, rowing, the wheel, anything and everything so that the patient is kept out of doors.

Proper clothing, and so adjusted as not to obstruct the circulation, or hinder the free use of all the muscles.

Bathing; there is no tonic in the pharmacopeia equal to a cold dash and a vigorous rub.

Healthful occupation; at 87 Gladstone says: "Work, work, if you want to keep young."

These are the important and essential things, both in restoring and maintaining health.

Drugs have constituted too large a part of our equipment, and the tendency has been to rely upon them to the exclusion, or at least the neglect, of the more important measures that are included in the one word, hygiene. The effort should be continually toward the establishment of a more logical relation between our therapeutics and the morbid conditions under treatment.

The thesis then is, that disease is not to be considered as something unrelated to the orderly sequence of events, but as something related by definite and distinct conditions to the natural order of things; and it is to be investigated and explained as is any other fact in natural history.

Anatomy, physiology, chemistry, physics, biology and bacteriology; proficiency in these things gives an understanding of the normal, and it is only thus that the abnormal can be recognized and combatted.

The study of medicine is becoming intensely interesting. The voice of the bacteriologist is being heard

in the land. The chapters in etiology are being rapidly rewritten. Theories and "opathies" are being replaced by demonstrations. Splendid are the results already attained! Much remains to be done, but the time is not far distant when the expression "The Science of Medicine" can be used without a mental reservation.

NERVOUS SHOCK AND DISEASE OF THE NERVOUS SYSTEM AS A CAUSE OF PERNICIOUS ANEMIA.

Read in the Section on Practice of Medicine, at the Forty-seventh Annual Meeting of the American Medical Association, at Atlanta, Ga., May 5-8, 1896.

BY JAMES B. HERRICK, M.D.

CHICAGO, ILL.

It is the object of this paper to direct attention to nervous shock or disease of the nervous system as a possible, or probable, exciting cause of grave or pernicious anemia. My attention was called to the relations between these conditions by the following case:

The patient, Mrs. M., white, 63 years of age, claimed to have been in good health up to November, 1893. She had rosy cheeks, was plump, weighed 137 pounds, led an active, busy life as a quasi-practitioner of medicine. She scarcely knew what it was to be confined to bed save when her children were born, five of whom she had brought into the world alive and healthy. She had never miscarried and there was no other evidence leading to the suspicion of syphilis. Her father had lived to the age of 87, to die an accidental death. Her mother succumbed to pleurisy at 63. One brother had died from some cardiac trouble and one sister from asthma. Two brothers and one sister were living.

In November, 1893, she fell on the sidewalk, hurting her back and left side. To use her own words: "The hurt extended from the back of the neck down the left side and left leg." She walked home, but from the time of this injury she found herself weaker, both physically and mentally. She was obliged to lie down the greater part of the day, and thought she was becoming paralyzed. Soon the legs began to bloat; and she would, upon sitting up for a short time, feel dizzy and perhaps faint. The patient became unable to walk for any great distance; had difficulty in picking up small objects such as a pin. The skin became paler; the appetite, notwithstanding, remained good; the bowels were constipated. She was often quite thirsty.

On admission to the Presbyterian Hospital June 30, 1894, her complaint of somewhat vague pain, of weakness of the arms and legs, and mental deterioration, for all which she assigned the injury as the efficient cause, coupled with the fact that there could be discovered no evidence of organic lesion to account for such phenomena, and also that she referred often to a $2,000 accident insurance claim that she had placed in the hands of a lawyer for collection, all this aroused a suspicion of exaggeration of symptoms as in railway spine, if not of malingering.

The increasing pallor of the skin led later to an investigation of the blood and a more thorough examination of the patient. I condense the results of several examinations.

Physical Examination Nov. 8, 1894.—Skin and mucous membranes of a lemon-yellowish white. Conjunctivæ show light yellowish tinge. Skin is dry, wrinkled, panniculus adiposus scanty. Patient talks rather slowly, as if taking a long time for framing answer and separate words. Speech reminds one of scanning speech of insular sclerosis. She moves hands and legs slowly and somewhat uncertainly; appears weak and unable to walk or stand unsupported; complains of great dizziness on being put in erect posture. Hair is gray, thin and falling out fast; ears and nose negative; tongue pale, flabby, not tremulous, protruded in median line; fetor *ex ore*; frequent spasmodic contraction of lower portion of orbicularis palpebrarum. Right eye beginning cataract; numerous retinal hemorrhages; left eye, retinal field practically the same; in right eye six hemorrhagic areas counted, in left twelve. The existence of retinal hemorrhages was confirmed by Dr. Alfred Hinde, who kindly examined the eyes for me. External jugular pulsates sychronously with apex-beat as does a vein (probably a perforating branch of the internal mammary) running just to the right of the sternum and parallel with it for its upper one-quarter. The chest is slightly flattened, of moderate length, intercostal spaces rather wide; respiratory movements regular, fairly deep, eighteen to the minute. Apex-beat faintly seen and felt in the fifth interspace just inside the left mamillary line; palpation otherwise negative. Percussion reveals no increased area of cardiac dulness. Pulmonary resonance on the right side in the mamillary line on expiration as low as to the sixth rib, on inspiration over seventh rib. Respiratory sounds are normal save an occasional moist râle; (in the last two days has "taken cold"). Systolic blowing is heard over entire precordia, best at apex; systolic hum also over vessels of neck. Abdomen is flabby, marked with lineæ albicantes; occasional peristaltic movements in region of umbilicus and to right of same. Edge of liver is felt very indistinctly about one inch below costal arch; inguinal glands are palpable but not perceptibly enlarged. No tumor mass or point of tenderness is found on palpation. Liver dulness is heard in median line, one-half way between ensiform cartilage and umbilicus; area of splenic dulness increased in posterior axillary line reaching as high as to the eighth rib; Stomach resonance apparently increased in area. Stomach reaches below umbilicus (gastroptosis); it appears moderately enlarged. Lesser curvature apparently made out between ensiform and umbilicus. After test breakfast (Ewald) no free HCl, no mucus, no remains of previous meal are present; pepsin uncertain; no lactic acid by Uffelmann's test. Lower extremities are moderately edematous; rectum negative, no parasites in stools; pelvic organs negative; bones negative, no tenderness. No evidence of organic or local nervous lesions can be made out. Sensation seems to be perfect, the reflexes normal. There is no paralysis. The bowels are inclined to constipation. There is no great frequency of urination, no difficulty in urinating, or irritation from urine. Movements of muscles are slow and feeble, not coördinated with certainty. Raises dynamometer to 10 with either hand. Urine is 1012, 30 to 50 ounces; no albumin, no sugar; solids, 660 grains; no formed elements. Blood is pale; marked poikilocytosis, microcytes and macrocytes; few nucleated red; megaloblasts, *i.e.*, the large nucleated reds, few; leucocytes increased relatively; many lymphocytes; number of red globules to cubic millimeter 666,666; hemoglobin (Fleischl) 25 per cent.; no parasites. I desire to acknowledge the kindly aid of the

late Dr. D. D. Bishop. Several of the numerous blood examinations were made by him.

I present temperature chart showing continuous irregular fever.

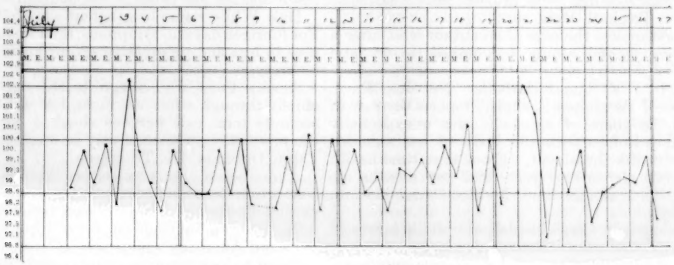
The patient remained in the hospital, though not under my immediate observation, until the middle of the summer of 1895. On increasing doses of arsenic there was a perceptible improvement, both as regards the subjective and objective symptoms. There was less dizziness, more certain movements of the hands and legs, clearer mind, greater strength. The blood count gradually changed so that on March 22, 1895, the hemoglobin was 80 per cent. and the red corpuscles 2,575,000, with no increase in the white. A severe attack of bronchitis or influenza seemed about to carry off the patient, but she rallied from this and finally left the hospital at her own request. I am unable to state facts concerning her subsequent history.

The case was seen by several physicians and all failed to locate any organic cord or brain lesion or any malignant growth.

The intense pallor of the skin, the subjective sensations of dizziness and palpitation, the great mental and bodily weakness, the retinal hemorrhages, the anemic murmurs, the enormous reduction in the number of red corpuscles with such marked variations in their form and size, the presence, though in small numbers, of nucleated corpuscles, the increased globular richness in hemoglobin, the corpuscles being reduced to 13 per cent., while the hemoglobin was reduced to but 25 per cent., the continued irregular fever, the temperature ranging from 97 to 102 F., gave an almost typical symptom-complex of the so-called progressive pernicious anemia of Biermer, or the primary essential anemia of Addison. Enlargement of spleen and liver have been often noted in these cases as well as venous pulsation.

But many cases clinically perfect as progressive and pernicious in character and apparently due to some primary disease of the blood or of the blood-making organs, have been found postmortem to have some organic lesion overlooked during life that should be regarded as primary. Thus a hidden carcinoma, an intestinal blood-consuming or toxin-producing parasite, as the anchylostomum duodenale or the bothriocephalus latus, an atrophy of the gastric and intestinal glandular structure may explain ah apparently primary anemia. Some authors incline to put these cases in the category of the essential anemias because of the predominance of blood changes and blood symptoms. Thus Eichhorst says that only those deuteropathic or secondary anemiæ are to be regarded as progressive pernicious anemiæ where there is a great disproportion between cause and effect. (Bd. IV, S. 22.) A case, therefore, of atrophy of the stomach or of anchylostomum disease where the symptoms of the anemia completely overshadowed those of the primary trouble he might class as progressive pernicious anemia. It seems better, however, with most writers to regard only the cases as progressive pernicious anemia in which the affection is a primary blood disease, in which so far as our present knowledge of the etiology and pathology goes, no change is found during life or after death save in the blood or the hematopoietic organs. That this is usually fatal is well known. Recoveries, however, are occasionally recorded. The term progressive pernicious had better be discarded, and the term employed first by Addison, primary essential anemia, substituted.

Looking upon this case as one of primary essential anemia, there remains to be noted the interesting connection between the injury with its nervous shock and the anemia. The patient and her friends assert that from a condition of apparent health, she almost immediately following the injury became an invalid, weak, dizzy, easily fainting, with swollen limbs, pale skin, in a word, anemic. Just how nervous shock produces anemia I will not attempt to say. Yet, if through a shock to the nervous system the secretion



of the sweat glands, of the gastric glands, or of the kidneys can be checked or increased, if the heart's action can become rapid and irregular, or perhaps cease altogether, if a chorea or an exophthalmic goitre can be roused to activity, it can be assumed that the function of the blood-producing organs may become perverted, and this suddenly, through the influence of a deranged nervous system. I recall a case of cerebral hemorrhage with aphasia and hemiplegia in which there was fatal anemia; also a fatal case of anemia following upon a sunstroke.

I am inclined to rule out atrophy of the glandular tissue of the stomach, largely from the absence of any symptom indicating a previous catarrhal inflammation, though the emaciation different from the well-preserved condition of pernicious anemia, the absence of mucus and of free hydrochloric acid and the enlargement of the stomach might seem to point in that direction.[1] There was certainly not present the small contracted stomach with exuberant development of connective tissue—cirrhosis ventriculi. The dilatation, more apparent than real, because of dislocation of the organ, was probably, as not infrequently occurs, due to

[1] Some, for example Strümpell, regard the changes in the glands of the stomach as secondary to the condition of anemia. Likewise the changes in the cord and other nervous structures.

relaxation of the atonic stomach walls. I believe there was no hidden carcinoma as the cause of the anemia because of the comparatively sudden onset; the absence of subjective or objective local symptoms; the unusually severe oligocythemia, reduction of erythrocytes to 1,000,000 per cubic millimeter being unusual in the terminal anemia of carcinoma; the marked improvement under arsenic, the improvement lasting for at least six months, and being scarcely reconcilable with a carcinomatous anemia after it had reached a stage indicated by a blood count of only 666,666; the retinal hemorrhage and the absence of cachexia.

Whether or not an organic disease of the brain or cord or of the sympathetic or peripheral nerves was present no one who saw the case would say. The interesting researches of Minnich in this connection are recalled by some of the symptoms.

While nervous shock or disease of the nervous system is not recognized in many of our text-books as an important etiologic factor in pernicious anemia, a number of cases are reported in which this is the assigned cause.

Under this head are not included those cases of nervous diseases as complications or sequelæ of pernicious anemia, such as degenerations of the posterior columns or the other parts of the cord, etc., and which Minnich has recently gone into so fully. (Cf. also Lichtheim, Trechsel, Burr, etc.)

Eichhorst quotes the case of an author who, after a most severe mental strain, succumbed to a fatal anemia.

Curtin, in 1885, under the title "Nervous Shock as a Cause of Pernicious Anemia," reports the case of a woman, 38 years of age, who was unexpectedly brought face to face with the body of her suicided brother with his throat cut. From that time health began to fail, and in four years and two months she was dead of a grave anemia. No blood examination; no autopsy.

2. A young lady was suddenly and brutally informed of her brother's death. Nervous prostration followed for many months, then pernicious anemia and death.

3. Practice of Dr. Musser: A woman, aged 42, after an attempt at her own murder by her husband, became nervous, excitable, almost insane; gradual failure of health, pronounced anemia; death in three years.

Curtin quotes also the case of a woman becoming profoundly anemic following fright at the house catching on fire. He also quotes from Mackenzie, who cites the case of Sir H. Marsh, where the young lady, who accidentally poisoned her father, was overwhelmed by grief, took to bed and died of anemia. Also the case of a young man who saw a child run over in the street, was greatly shocked, began to grow anemic; no organic lesion postmortem.

Under Sir William Gull, a young man died in Guy's Hospital of extreme anemia that had developed after he had been attacked by a sheep in a field.

Musser in 1885 gave a résumé of thirty-nine cases of pernicious anemia up to that time reported in America, and quotes cases of Curtin, Osler, Pepper and himself, where anemia seemed to be due to nervous shock.

Hutchinson cites cases in which nervous influence seemed to him to be the exciting cause. 1. A case of his own where mental worry over the death of a wife was the cause. 2. Case in consultation where a manufacturer who had worried about business had become anemic, apparently from no other cause than business worry. 3. Four daughters died in one week of smallpox. The father, apparently from the shock and the excessive grief, developed pernicious anemia.

Dr. Brower cites a case of pernicious anemia developing in a previously healthy young woman following a railway accident. Death in six months. He also calls attention to mental worry as an exciting cause of the milder grades of anemia and of chlorosis, and is authority for the statement that in a student worrying and apprehensive about the approaching final examination, the hemoglobin became reduced to twenty per cent.

Schüle, in three cases of pernicious anemia in the insane, seemed to see some genetic relation between the incurable cerebro-spinal lesions and the progressive anemia. He quotes the experiments of Goltz, Heubel and Von Tarchanoff as tending to prove the influence of the nervous system on blood formation, apart from the trophic influence of the spinal cord.

Macphail also describes pernicious anemia as it developed in two insane patients.

Holst believes that through neurasthenia the secretory nerves and the trophic nerves are influenced in such a way that blood deterioration results. He regards the anemia therefore, in many cases, as a result and not the cause of the neurasthenia.

Hale White refers to a patient who fell on the ice. For fourteen days no symptoms, then weakness, numbness in legs and progressive severe anemia; apparent recovery.

Among those who assign to the nervous system, chiefly through what we must, for want of a more accurate term, call nervous shock, a certain rôle in the production of anemia may be mentioned Heiberg, Fabre, Germain Sée, Trousseau.

A number of observers believe there is some causal connection between lesions of the nervous system and pernicious anemia. Thus Saaski believes the gastro-intestinal form depends on nerve atrophy in Meissner's and Auerbach's plexuses. These changes he is inclined to look upon as primary and not as secondary to the anemia, though others reverse the order of pathologic change. He examined two cases and forty-eight control cases.

Brigidi examined the body of a woman, aged 53, dead after two years of anemia. The only weighty postmortem finding was an inflammatory and fatty degenerative change in the celiac ganglia. He thinks the influence on the circulation of the digestive tract might explain the poor digestion and consequent anemia.

Pokrowski, autopsy on a case of pernicious anemia, found changes in cerebellum, fourth ventricle and medulla, and was led to conclude that the finding in the central nervous system must have had an influence, if not the sole influence, in producing the anemia.

Banti refers to a group of anemias—anemia ganglionare—in which he believes the primary change is in the sympathetic nervous system.

Little also regards many cases as due to an irritation of the vaso-motor system.

I feel warranted from my study of this case and a perusal of the literature bearing upon this subject, in drawing the conclusion that in some cases of pernicious anemia there is a causal connection between shock or injury to the nervous system and the result-

ing anemia. Whether such shock acts by interference with the nervous mechanism of the digestive organs, the stomach, intestines, liver, pancreas, the ultimate result being a severe anemia, or whether through altered nervous influence, there is abnormal performance of function on the part of the hematopoietic organs, it is impossible to say. In assigning to nervous shock an influence in the production of anemia it is not necessary to regard it as the sole cause or even the prime cause. Just as in the case of pneumonia we look upon the pneumococcus as the main cause of the disease, but yet regard exposure to cold as an exciting cause that favors the localization or pathogenic action of the specific organism, so in the case of pernicious anemia, the nervous shock may in some way merely favor the action of some otherwise inert microörganism or toxin, that under these altered circumstances produces a profound or even fatal anemia.

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DISCUSSION.

DR. H. A. WEST, of Galveston, Texas—One fact in explanation of the influence of nervous shock in producing anemia perhaps was not fully brought out. I refer to the influence of nervous and mental shock upon the digestive organs; upon the appetite, causing anorexia, and such disturbances of the digestive processes as would account to a considerable extent for these anemic conditions. One can readily understand the philosophy of such a modus operandi. That the appetite is interfered with, assimilation and metabolism are disturbed, and anemia follows.

DR. J. H. MUSSER, of Philadelphia—Recently two cases of pernicious anemia have come under my care which were secondary to, if not due to, nervous influence, anxiety and grief followed by digestive disturbances. They would seem to indicate nervous shock bringing on gastro-intestinal disorders, with malnutrition and anemia. This view is also in accord with the studies of the pathology of pernicious anemia by Hunter and others, tending to show that it is related to, and is largely secondary to, conditions of the gastro intestinal tract. The poisonous agent probably escapes the liver, is not destroyed as it should be, but enters and acts directly upon the blood, producing anemia. It seems to me that this is the train of processes going on, and with such a view it is proper to say that shock and other nervous influences of a functional character rather than those of organic change act in producing the anemia. I have never seen pernicious anemia occur in organic disease of the nervous system, but shock and other nervous influences said to be of functional character may be promotive of that condition.

DR. J. WELLINGTON BYERS, of North Carolina—It seems to me that a number of conditions may bring about that vicious circle, if we may so call it, of malnutrition which results in pernicious anemia. Nervous shock may be one of these.

DR. LOUIS FAUGERES BISHOP, of New York—I think this paper is very interesting as illustrating in another direction the fact that the nervous system presides over the chemistry of the body in whatever part of the body the chemistry takes place. We see that not only in anemia but also in gout. Gout is a disease which is very closely connected with a depressed condition of the nervous system, and the chemistry of the body seems to go wrong because the nervous system is not in condition to exert proper control. There is one interesting fact in connection with this control of the chemistry of the body by the nervous system, and that is the value of strychnin in a great many varied conditions. I think this value, not only in the treatment of anemia, but in the treatment of a great many diseases is due to its power of stimulating the nervous system to perform better its work of controlling the chemistry of the body.

A NOTE ON THE ACTION OF APOLYSIN.

Read by Title before the Texas State Medical Association at Fort Worth, April, 1896.

BY DAVID CERNA, M.D., PH.D.

Demonstrator of Physiology and Lecturer on the History of Medicine in the Medical Department of the University of Texas.

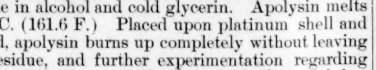
Recent literature concerning antipyretics and analgesics has brought to the notice of the profession several new drugs, among which *apolysin* seems to occupy a prominent place. Through the courtesy of a new York drug firm that kindly furnished me with a considerable amount of the new medicament, I have been enabled to conduct a series of experiments in the physiologic laboratory of the University of Texas, at Galveston, the results of which I shall endeavor to embody in this brief report.

Apolysin is a substance closely related to phenacetin. Like the latter drug apolysin contains paraphenetidin. In phenacetin, however, the paraphenetidin of the amide group (NH_2) one atom of hydrogen is replaced by an acetic acid radical; while in apolysin the atom of hydrogen of the paraphenetidin of the amide group is substituted by a citric acid radical. It may be said in this connection, that a combination of phenetidin and citric acid under the name citrophen, or citrate of phenetidin, has been referred to by Benario as possessing medicinal virtues.[1] But according to Seifert[2] although one molecule of citric acid can be combined with phenetidin to form the so-called citrophen, it can also be combined with two molecules and with one molecule of phenetidin, respectively, to form different substances. Treupel[3] has experimented with citrophen, and found it to be poisonous like all the salts of phenetidin. On the other hand, it is claimed that apolysin is not related to the citrate of phenetidin, or citrophen, but that it contains two complete citric acid groups, and is practically non-poisonous, being not a simple salt of phenetidin, but a phenetidin permanently combined in an anilid-like form. The innocuousness of apolysin has apparently been demonstrated by the investigations of Nencki and Jaworski.[4] Further, it is asserted by Seifert that carbonate of sodium causes no changes in apolysin, while the addition of that same sodium carbonate to citrophen produces an immediate separation of phenetidin as a free poisonous base. Hildebrandt,[5] who has also studied the chemical relations of both citrophen and apolysin, affirms that these two substances differ chemically from one another in this, that in the latter, apolysin, one molecule of phenetidin is associated with one molecule of citric acid with the production of water; while in the former, citrophen, three molecules of phenetidin are combined with one of citric acid but without the production of water; that the relation of citrophen to apolysin is like that of the lactate of paraphenetidin to lactophenin.

Apolysin appears in the form of a white or yellowish-white crystalline powder having a faint smell and

[1] Deutsche Med. Wochenschrift, Nos. 26 and 32, 1895.
[2] Deutsche Med. Wochenschrift, Nos. 32 and 44, 1895.
[3] Deutsche Med. Wochenschrift, No. 33, 1895.
[4] Gazeta Lekarska, May, 1895; also Allg. Med. Cent. Zeitung, July 27, 31 and August 3, 1895.
[5] Centralbl. für inn. Medicin, Nov. 9, 1895.

an acrid taste; is readily soluble in warm water, and in cold water in the proportion of one part to fifty-one, or at most fifty-five. This new drug is also freely soluble in alcohol and cold glycerin. Apolysin melts at 72 C. (161.6 F.) Placed upon platinum shell and heated, apolysin burns up completely without leaving any residue, and further experimentation regarding its chemic behavior, with nitrate of silver, sulphuretted hydrogen, and sulphid of ammonium, shows that it contains no metallic substance. Treated with concentrated hydrochloric acid and chromic acid, it gives a ruby red color. But apolysin combines with metals to form salts; it also forms combinations with caffein, quinin, sodium, magnesium, lithium and other substances. The formula of apolysin is given as follows:



In an experimental study, previously referred to, Nencki and Jaworski[6] found that apolysin even in considerably large doses was non-poisonous to frogs and rabbits. In the former class of animals apolysin injected hypodermatically in the proportion of from 0.0005 to 0.004 gram to 1 gram of the body-weight, produced absolutely no toxic effects. The same results were obtained in the case of rabbits. To one of these rodents, weighing 1345 grams (47 ounces), was administered 3.5 grams (54 grains) of a 10 per cent. watery solution of apolysin, that is, in the proportion of a little over 2½ grams per kilogram of the body-weight, but no bad effects were observed. Hildebrandt,[7] like Treupel, says that citrophen, identical, as has been stated, with the ordinary citrate of phenetidin, is poisonous to rabbits; while the toxic properties of apolysin are practically *nil*, and certainly much less than those of phenacetin. He affirms, indeed, that 8 centigrams (1¼ grains) of apolysin, injected subcutaneously, caused no ill effects on white mice, while 3 centigrams (2-5 of a grain) of phenacetin, administered to the same class of animals, produced the characteristic toxic effects of phenetidin.

I have been able to corroborate some of these statements in regard to the general action of apolysin on dogs, and as illustrations I append the following experiment:

Experiment 1.—Dog weighing about eight pounds. Exposed external jugular vein and injected into it 5 grains (3 decigrams) of apolysin dissolved in water at 10 A.M., 10:15 A.M. no effect, and gave another dose of 10 grains (6 decigrams). This injection was followed a few moments later by a slight increase in the number of respiratory movements, but this effect soon disappeared and the animal continued well. At 10:45 A.M. a third dose of 15 grains (1 gram) was administered. A short time afterward the canine began to breathe a little faster than usual, and then sought a corner of the room where he remained for about an hour, very quiet; in half an hour later the dog was as lively as ever. At 3 P.M. injected 15 grains (1 gram) more, and with the exception of the respiratory disturbance alluded to, and a tendency of the animal to remain quiet, no other marked effects were noticed in the course of three hours, by which time the dog seemed as well as ever.

In the experiments that follow the animals were first anesthetized, and then, after the external jugular vein was exposed and prepared for the injections, the carotid artery was connected with the kymograph in order to better observe the effects on the circulation and the respiration. Observations were made at the same time regarding the bodily temperature, this being taken at the rectum by a thermometer with centigrade scale. In all these experiments a five per cent. watery solution of the drug was used.

Experiment 2.—Dog, weight twenty pounds. An injection of 5 c.c. caused no alteration in pulse, blood-pressure or respiration in the course of fifteen minutes. A second injection of 10 c.c. of apolysin solution was followed by a scarcely perceptible fall of the arterial pressure accompanied with a slight increase in both the rate of the pulse and the number of respirations, these effects soon passing off, however. Three more doses of 5 c.c. each were given at about twenty minutes intervals, but with the exception of the same slight disturbances like those noticed after the second injection, no marked permanent changes were observed either in the circulation or the respiration. The blood appeared to retain its normal character. During the experiment the animal seemed quiet as if under the influence of some nerve-depressing agent. The temperature was slightly reduced. The dog was finally killed with chloroform.

Experiment 3.—Dog weighing about twenty-eight pounds was used. The first intravenous injection of 10 c.c. caused an immediate fall of the arterial pressure, a temporarily increased but soon followed by a diminished beat of the heart, and an acceleration of the respiratory movements. The blood pressure and the heart's action shortly returned to the normal condition and remained so for fully an hour. A second injection of 5 c.c. produced no circulatory changes, but the same disturbances in the respiratory function previously observed were again produced. An injection of 10 c.c. given a few moments later was followed by a rapid fall of the blood pressure and reduction of the pulse-rate, which changes, however, soon disappeared. The respiration was markedly affected, the rate of movement becoming almost twice as high as in normal circumstances. The thermometer at the rectum showed, about twenty minutes after the last injection, a fall of the bodily temperature amounting to a little over half a degree. No changes observed in the blood itself.

Experiment 4.—A small dog, weight about ten pounds. Gave repeated intravenous injections, at short intervals, up to about 3 grams (45 grains). This finally caused death by a simultaneous arrest of the respiration and the heart, the symptoms of asphyxia being particularly marked. Death was preceded by considerable hematuria and cyanosis, with a distinct discoloration of the blood.

A better idea can be obtained, perhaps, of the actions exercised by apolysin on the circulation and the respiration, from a description of some of these experiments in tabulated form, as follows:

Experiment No. 5. Dog; weight, 15 pounds.

Time. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		120	90	32	Normal.
3:15	2 c.c.	120	95	32	Injection begun.
:30		120	95	32	Injection ended.
4:00		120	102	38	
5:00		120	100	40	
7:00		118	95	40	
9:00		120	90	38	
12:00	2 c.c.	120	90	36	Injection begun.
:40		118	90	38	Injection ended.
13:00		104	80	40	
15:00		100	75	42	
20:00		118	90	38	
25:00		120	90	34	
40:00		120	92	32	
45:00					Killed with chloroform.

Experiment No. 6. Dog; weight, 12 pounds.

Time. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		160	120	36	Normal.
2:00	1 c.c.	160	120	36	Injection begun.
:30		160	120	36	Injection ended.
3:00		160	120	38	
5:00	3 c.c.	160	120	36	Injection begun.
:30		150	128	40	Injection ended.
6:30		120	108	42	
8:00	2 c.c.	126	116	40	Injection begun.
8:30		110	104	46	Injection ended.
9:00		104	102	48	
10:00		90	98	46	
15:00		108	112	40	
20:00		140	118	42	
40:00		160	120	38	
55:00		160	120	38	Killed with chloroform.

A close examination of the preceding experiments

[6] Loc. citat.
[7] Loc. citat.

shows that small or even medium-sized doses of apolysin cause no marked effects on the circulation. Large quantities, however, reduce both the pulse and the arterial pressure. The same phenomena are still produced after previous section of the pneumogastrics, as well as after peripheral paralysis of the vagi by atropin, as shown in the following experiment:

Experiment No. 7. Dog; weight, 22 pounds.

Time. h. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		140	204	24	Vagi paralyzed by a small dose of atropin.
5:00	2 c.c.	142	204	24	Injection begun.
:30		138	208	28	Injection ended.
7:00		140	206	28	
8:00	3 c.c.	140	206	26	Injection begun.
:30		170	188	30	Injection ended.
9:00		108	160	32	
10:30		84	158	36	
12:00		80	150	32	
15:00	3 c.c.	100	162	30	Injection begun.
:30		70	140	36	Injection ended.
18:00		65	130	38	
25:00		50	110	32	
30:00		75	140	28	
50:00		200	138	26	
52:00					Killed with chloroform.

Experiment No. 8. Dog; weight, 26 pounds.

Time. m. s.	Dose. Grams.	Pressure. mm.	Pulse. per min.	Resp. per min.	Remarks.
0:		180	210	12	Vagi cut, cannula in trachea
5:00	5 c.c.	180	212	14	Injection begun.
:30		172	212	16	Injection ended.
6:30		160	180	22	
7:30		152	160	30	
9:30	5 c.c.	148	160	30	Injection begun.
10:30		130	168	32	Injection ended.
12:00		122	140	26	
20:00	15 c.c.	126	138	28	Injection begun.
21:00		110	120	18	Injection ended.
25:00		104	108	16	
28:00		98			Involuntary discharge of bloody urine; respiration labored; pulse very irregular; cyanosis.
35:00					Animal dies from a simultaneous arrest of its heart and respiration.

From the foregoing evidence it can be said that the reduction of the pulse rate is independent of any excitation of the cardio-inhibitory nerve centers, and is chiefly due to a cardiac influence. The changes observed on the pulse and the arterial pressure appear also to show that the latter falls owing mainly to an action on the heart directly. I do not believe the vaso-motor system is affected by apolysin, and if there be any influence exercised even in massive doses, it must be slight and subservient to that produced upon the heart itself. I could not, however, determine this point positively, since my experiments by severing the spinal cord were unsuccessful.

Respiration: As seen in the course of the above experiments, the increase in the number of respiratory movements produced by apolysin in both normal animals as well as those in which both vagi had been previously paralyzed by atropin and by section, was an usual occurrence. The action is, therefore, central.

Temperature: Apolysin appears to exercise a slight influence on the bodily temperature of normal animals, except, perhaps, in very large doses. The accompanying experiments are self-explanatory.

Febrile temperatures, on the other hand, are easily reduced by apolysin even in comparatively small doses. For these experiments I first produced artificial fever in dogs, by intravenous injection of putrid blood; and in a second series of experiments the blood and the drug were administered together and

Experiment No. 9. Dog; weight, 23 pounds.

Time. h. m. s.	Dose. Grams.	Pressure. mm.	Rectal temp. C. scale.	Remarks.
0:		172	39.2	
5:00	10 c.c.	172	39.8	Injection begun.
:30		168	39.3	Injection ended.
13:00		172	39.1	
15:00	10 c.c.	170	39.1	Injection begun.
:30		165	39.1	Injection ended.
20:00		168	39.	
30:00	10 c.c.	162	39.	Injection begun.
:30		160	39.	Injection ended.
45:00		166	38.8	
55:00		170	39.	
1 05:00		168	39.	
1 20:00	15 c.c.	170	39.1	Injection begun.
1 20:30		158	39.1	Injection ended.
1 35:00		156	39.	
1 45:00		160	38.8	
2 00:00		162	38.6	
2 15:00		168	38.	
2 20:00		170	38.4	
3 15:00		172	39.1	Animal killed with chloroform.

Experiment No. 10. Dog; weight, 18 pounds.

Time. h. m. s.	Dose. Grams.	Rectal temp. C. scale.	Remarks.
0:		39.5	Injections subcutaneously.
5:00	20 c.c.	39.5	
20:00		39.5	
35:00		39.4	
50:00		39.4	
1 05:00	20 c.c.	39.4	
30:00		39.3	
2 00:00	20 c.c.	39.2	
30:00		39.	
3 00:00		38.8	
30:00		39.8	
4 00:00		39.	
5 00:00		39.8	
30.00		39.4	Animal killed with chloroform.

the effects observed. For purposes of illustration I detail only one experiment, as follows:

Experiment 11.—Dog weighed thirty-two pounds. First day: In the normal state; at ten A.M. the rectal temperature was 39.1 C.; 11 A.M., 39.1; 12 A.M., 39.2. In the fever state, 1 P.M., 39.2. Injected into the jugular vein three drops of putrid blood: 1.30 P.M., 39.3; 2 P.M., 39.8; 2.30 P. M., 40.3; 3 P.M., 41.3; 4 P.M., 41.8.

Second day: 9.30 A.M., 39.4. Injected five drops of putrid blood; 10.30 A.M., 41.3. Injected three drops of putrid blood and 10 c.c. of apolysin solution; 10.45 A.M., 40.8; 11 A.M., 39.6. Injected three drops of blood and 10 c.c. of apolysin solution; 12 M., 39.3; 1 P.M., 39.2; 2 P.M., 39. Animal sacrificed with chloroform.

The same results were obtained in other similar experiments. But whether this reduction of febrile temperature by apolysin be the outcome of any direct or indirect action on the heat centers I am not prepared to state. In order to determine this point calorimetric studies are necessary. It is probable, however, that the influence of apolysin in reducing febrile temperatures is similar to that of phenacetin, with which the drug under consideration is identical, the antithermic effects depending on the separated paramidophenol.

Clinical Uses of Apolysin.—Apolysin has been employed in practical medicine not only as an antipyretic but as an analgesic as well. In both instances the drug is alleged to have given satisfactory results.

I have had no opportunity to try the drug in febrile patients, but in two cases, one of lumbago and the other of muscular rheumatism, in which pain was a prominent symptom, apolysin produced a prompt and quite effective relief.

Nencki and Jaworski have used the drug somewhat extensively, it seems, in disease to test both its antipyretic and analgesic properties. Observations were made in the treatment of croupous pneumonia, scarlet fever, typhoid fever, puerperal fever, influenza, pyemia, follicular tonsillitis, erysipelas, sciatica, head-

ache and various kinds of neuralgia. The authors affirm that in the febrile affections mentioned, apolysin exercised a powerful antithermic action; that in neuralgic troubles it diminished the hyperesthesia, shortening the individual attacks, and at the same time alleviating the symptoms almost entirely. It is also stated by the same clinicians that owing to the fact that apolysin is easily decomposed by the gastric juice, the drug is contraindicated in hyperacidity of the stomach, and that it ought not to be given if the latter organ be empty. Under these circumstances, however, according to Hildebrandt, apolysin may be administered in combination with bicarbonate of sodium, in the form of tablets, which effervesce on being dissolved in water, owing to the liberation of carbon dioxid.

All the authors here quoted seem to regard apolysin as superior to phenacetin, owing to its solubility and to its non-poisonousness even when ingested in comparatively large quantities; that the depressing effects upon the heart, which are distinctly seen in phenacetin due probably to the phenetidin which the latter remedy contains, are not observed under the action of apolysin.[8] Again, it is held that the innocuousness of apolysin is probably due to its similarity to citric acid, obeying the law expounded by M. von Nencki. According to this law the entrance of an acid group in a poisonous substance diminishes or entirely destroys its lethal properties. It is further asserted by these authors, especially by Seifert, as will be remembered, that apolysin is practically non-poisonous because it is not a simple salt of phenetidin, but a phenetidin permanently combined in an anilid-like form, and yet Nencki and Jaworski say that apolysin is easily decomposed by the gastric juice. The drug appears to be decomposed in the organism, since these latter authors, as the result of experimentation, affirm that apolysin taken in daily doses of 45 grains (3 grams) is, in part at least, eliminated in two forms, that is, as paraamidophenol and paraphenitidin.

It has been shown by Treupel[9] that paraamidophenol, like paraacetamidophenol, when injected intravenously into dogs in the proportion of from 15 to 30 grains (1 to 2 grams) for every 2.2 pounds (1 kilo) of the body-weight, produces toxic effects, these being manifested by clonic and tonic spasms of the extremities, a rapid respiration, and paralysis of voluntary motion. In the same class of animals, these substances in the proportion of 7.5 grains (0.5 grams) per 2.2 pounds (1 kilo) of the body-weight, caused somnolence, weakness in the hind extremities, cyanosis, vomiting accompanied with an increased secretion of tears and saliva, and the production of methemoglobin in the blood. It is said, moreover, that the reduction of fever in the human subject by both paraamidophenol and paraacetamidophenol is accompanied with chilliness, vomiting and tinnitus aurium.

But be all this as it may, and although fully agreeing with the statements of the authors referred to, as to the innocuousness of apolysin even when ingested in large amounts, and notwithstanding the assertion that the drug is usually reluctant to part with the phenetidin which it contains, care, I believe, should be exercised in the administration of apolysin. It is true, no case of poisoning by this agent in man, has been reported as yet, and although Nencki and Jaworski, Seifert and Hildebrandt have observed no lethal effects, I, myself, have seen not only bad results but death also in the lower animals following the ingestion of apolysin. The results of Experiment 4 are here recalled. In this experiment intravenous injections of the new medicament finally caused death by a simultaneous cardiac and respiratory paralysis, the fatal issue being preceded by considerable hematuria, cyanosis and marked symptoms of asphyxia, changes, be it remembered, similar to those produced by paraamidophenol and those caused by paraphenetidin. Therefore, while I do not consider apolysin a toxic agent in ordinary therapeutic and even larger doses, I must certainly caution against its injudicious administration as a routine practice in all those cases calling for antipyretic and analgesic remedies. Apolysin may be given to adults in single doses varying from 15 to 30 grains (1 to 2 grams) by the mouth; to children in proportionate amounts according to age.

[8] See my paper on "Phenacetin as a Toxic Agent" in Transactions of Texas State Medical Association, 1895; also in JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, May 11, 1895.

[9] Deutsche Med. Wochenschrift, No. 14, 1895.

SOCIETY PROCEEDINGS

Medical Society of the State of Pennsylvania.

Forty-sixth annual Session of the Medical Society of the State of Pennsylvania, held at Harrisburg, May 19 to 21, 1896.

(*Continued from page 1176.*)

DR. R. W. STEWART, of Pittsburg, read a paper on

THE TECHNIQUE OF SUPRAPUBIC CYSTOTOMY.

This is indicated in vesical calculus where the stone is too large or hard to crush and remove by litholapaxy or in the modified operation of crushing by means of median perineal incision. Its general adoption has been deterred by its supposed dangers, etc., which are chimerical. It is the easiest to perform if the operator will bear in mind the technique. The lower bowel to be emptied by enemata, the pubes shaved, the patient anesthetized, the bladder washed out by solution of boracic acid. It is best done by a bag suspended, say three feet, above and the solution allowed to escape after the bladder is full; repeat till the escaping fluid is clear. The bladder is then filled and an assistant retains the catheter and washing apparatus so that when the fluid escapes by the suprapubic opening more enters by the catheter. Place the patient in the Trendelenburg position. Stand on the left side of the patient, incise in the middle line from a point half an inch below the upper border of the symphysis to a point two and a half inches above the pubes. Cut through the skin and fascia, exposing the muscular aponeurosis. The finger now feels in the lower part of the incision for the notch marking the upper border of the symphysis. Here boldly thrust in the knife till its point is arrested by the cartilaginous junction of the pubic bones. Expose this early; it is easy to find, and the incision may be carried down to it with a disregard of the abdominal contents. It is the principal landmark, as it marks both the lower limit but divides the muscular aponeurosis and separates the tendinous insertion of the muscles. Divide the aponeurosis the length of the wound, separate the recti with the handle of the scalpel. Use retractors to separate the margins of the wound. Right index finger should be inserted at the lower angle, hugging closely the inner surface of the pubic bones. In sixteen operations he followed this plan, not regarding the peritoneum. As the finger approaches the lower border of the symphysis it lies in contact with the anterior surface of the bladder, at this point covered with fatty tissue and a plexus of veins. The fluctuating bladder is distinctly felt. If in doubt, an assistant should pass a finger into the rectum and press forward and thus determine its position. The bladder wall is then fixed by thrusting two tenacula through its most prominent part. A narrow bladed knife is thrust cutting edge up, into the bladder between the tenacula and the incision carried down to any desired extent, to be determined by the nature of the case and requirements for intravesical manipulation. While the bladder is open it should be continually flushed with the boracic acid solution to keep it and the wound clean and the field free from blood. Suturing the bladder has long been debatable. If there is a marked cystitis with putrid urine, the incision is not likely to heal save by granulation. The anvantage of primary union is so great that an effort should be made to obtain it except where septic condi-

tions are such as to preclude its possibility, or in cases where the limited extent of the incision, aided by the retention of a catheter in the urethra, renders suture of the vesical walls unnecessary. The upper and lower angles of the wound in the abdominal wall should be sutured and a pledget of iodoform gauze loosely inserted into the prevesical space and the ordinary dressings for a laparotomy applied. Retain the catheter in the urethra and drain the bladder for several days.

Dr. Carl Seiler, of Philadelphia, read a paper on "Perforation of the Nasal Septum."

Dr. Evan O. Kane, of Kane, read a paper

THE CHIEF PREDISPOSING INFLUENCE IN THE PRODUCTION OF TUBERCULOSIS.

While paying the highest respect to the tubercle bacillus as a determining factor in the production of tuberculosis, he pointed out certain contradictory and puzzling phenomena which confront the practical physician in his endeavor to apply the theory. He placed considerably greater stress upon the importance of certain vague preëxisting phenomena than scientists have lately appeared to. Next he endeavors to describe these phenomena pointing out that they are not due as has hitherto been supposed, to certain unhygienic conditions but are due to a diathesis which while strumous is actually the result of an inherited syphilitic taint much attenuated often, yet still of a grave character. He further shows how such a diathesis is specially adapted for the reception of the tubercle bacillus and for the production of tuberculosis. The article closes after having proven how important a part the inherited taint plays, by an appeal to physicians not to overlook so grave a predisposing influence in their endeavor to eradicate a germ whose position would be untenable without it.

Dr. Mary McKay Wenck, of Sunbury, read a paper on "The Hygiene of Pregnancy."

Dr. W. H. Harrison, resident physician of the Insane Asylum at Harrisburg, gave a paper

THE PATHOLOGY OF THE BLOOD OF THE INSANE.

Insanity is a disease of the physical system. Owing to our ignorance of the minute structure of the encephalon and its physiology and pathology, the principles of psychology and psychiatry are arranged still on functional lines. The tendency of the times is to develop the principles that every function has a physical center and that every derangement of function is due to morbid change of such physical center or else to some pathologic interference with its relations to certain parts. Acute insanity is always associated with derangement of one or more parts of the physical system. Examination of the dejecta and secretions often makes this plain enough. The exterior of the body shows symptoms of widespread disease which the experienced alienist makes note of. Disturbance of the mind is only too commonly accompanied by disturbance of the digestive functions. Careful analysis of the urine of over five hundred cases of insanity reveals pathologic changes in this fluid in a large proportion of cases. In all forms of insanity there is physical waste as well as deterioration in the acute stage, and in the chronic condition as well, though such change is modified to some degree in the latter by an improvement in the physical condition at the close of the acute period. Pathologic changes in the blood are some of the physical symptoms of the mental disorder, primarily or secondarily. There is a tendency to very slow coagulation after withdrawal of the blood in many cases although in the acute insane the tendency to clot early is quite pronounced in some cases. We have noticed this tendency where there is increase of specific gravity of the blood as a whole, where there is concentration of the blood from liquid abstinence. The specific gravity as a whole is commensurate with its physical condition. In exaltation when the number of cellular elements is above normal exceptionally the specific gravity is likewise above normal. By means of the hemoglobinometer, hemocytometer, hematokrit, we learn very important symptoms, which the customary means at the hands of the physician do not reveal to us. We thus learn by more scientific means the physical state of the individual. And so we have come to take blood data of each individual on his entering the hospital and in special cases at certain intervals. We are thus guided in our dietary and medical and hygienic treatment of the insane. The blood of the insane is impaired or in a morbid state. In mania the rule is that the red cells are diminished in number, the diminution corresponding to the deterioration of physical health generally. But in many maniacs near the inception of the exaltation, especially where the period of depression has been short and the disease has not had time to cause palpable physical deterioration, such exaltation is sometimes accompanied by an increase of the red cells above the normal. The secretions and the emunctories act powerfully and rapidly so that there is rapid drain of water from the system, which loss of fluid is seen in the blood in a very short time, and consequently there is increase of hemoglobin and of red and white cells and plaques in proportion. We exceptionally meet cases where this proportion is distinctly modified, the white cells and plaques, more rarely either alone, being in greater or less proportion to the red cells than normal. At the same time the body weight declines. Thence the propriety of supplying the maniac with abundant food and drink at frequent intervals, with tonic remedies. In an exhausted maniac who came within our notice a few months ago the number of red cells per cu. mm. was about 8,000,000. After a liberal supply of food and fluid at the end of ten hours there was a reduction of red cells to 4,000,000. As to the hemoglobin we have only very rarely found it increased above normal in mania. Although diminished below normal in mania, as the rule it is at greater degree in exaltation than in depression. As a rule, the ratio of white cells and plaques bear the same relation to the red cells as in health. However, there are many variations as to these bodies with the physical deterioration in different forms of depression. In melancholia there is notably a diminution in red cells, with exceptional cases. The profounder the depression the more pronounced such diminution. And yet at Kirkbride's Hospital we examined the blood of patients who were regularly fed by tube for long periods and in whom the reduction of red cells was only slight. As in exaltation so in mania there is often considerable variation as to the ratio of white cells and the plaques to the red. In dementia the diminution of red cells and white cells and plaques in proportion is commonly quite marked. In the case of a dement at Kirkbride's the number of red cells was as low as 918,000. In some cases of dementia, however, at the State Hospital we have found that the diminution was only slight, cases of men and women who, after the storm of mania and melancholia has passed and the body took on flesh, increased in weight and became well nourished, and the white cells and plaques were in normal proportion, and the hemoglobin though below normal was of a pretty fair figure. In dementia we frequently find a disproportion of red to white cells and the plaques more commonly than in acute insanity. In epileptics we sometimes find excess of the cellular elements beyond the normal line during and immediately following convulsions, at all events in many cases a decided increase, and the hemoglobin increased, with many corresponding physical symptoms, as the appearance of albumin in the urine, all due to great functional disturbance, and after some hours a corresponding diminution in these elements, notably below the normal line, a true reaction after the violence of the convulsions, and later on the more equable deterioration of many physical symptoms including those of the blood as in dementia. In paretics likewise during and immediately following the convulsion there is commonly an increase in the cell elements, sometimes beyond the normal line, to be followed after some hours by the reactionary diminution of the cells and hemoglobin, and then later on the steady decline in cells as to number and in the hemoglobin which decline is very rapid, keeping pace with the general physical deterioration in many other respects.

Dr. Anna M. Fullerton, Philadelphia, read a paper "Records of Work in the Woman's Hospital of Philadelpia." She gave a summary of the work done from 1886 to 1896, demonstrated the comparative frequency with which the various forms of pelvic disorders occurred. Inflammatory complications of septic origin, puerperal or gonorrheal, were found to constitute a very large proportion of the conditions treated, which to the author's view, explained the necessity for so frequent a recourse to medical rather than palliative measures in their management. Cases were cited from the records of the author's work in the hospital illustrative of this point.

Dr. W. C. Hollopeter, of Philadelphia, read a paper on "Milk Filtration."

On motion of Dr. John Curwen, of Warren Insane Asylum, a committee of five was appointed to memorialize the legislature in favor of the establishment of a hospital for the acute, chronic, convalescent and epileptic insane of the counties of Potter, Tioga, Clinton, Lycoming, Clearfield, Jefferson, Center, Huntingdon, Blair, Cambria, Bedford, Somerset and Indiana.

On motion of Dr. A. Koenig, of Pittsburg, it was resolved:

Whereas, a large number of physicians and surgeons are engaged in valuable and gratuitous service in the State of Pennsylvania; and

Whereas, such physicians and surgeons are conspicuously familiar with the interests and requirements of the hospitals with which they are connected;

Resolved, That it is the sentiment of this Society that every

hospital having an unsalaried staff should have in its Board of Managers a liberal representation from its medical and surgical staff.

THIRD DAY—MAY 21.

DR. GEORGE E. SHOEMAKER, of Philadelphia, read a paper,

THE FIBROID UTERUS; WHEN AND HOW TO OPERATE.

Improvements in technique in the last five years have lessened the primary mortality; have lessened complications and have increased the number of patients who should be subjected to operation. Small tumors call for extirpation when severe bleeding and pain resist minor measures and this should be done before the patient is exhausted. Awaiting the menopause often disappoints expectations of relief. All large growths, all associated with septic inflammation, all which are rapidly growing, all which are likely to obstruct labor call for removal. Where the tumor prevents recovery from severe types of functional nerve disorder or in incipient phthisis, it may be removed. The presence of heart and kidney lesions, if not too severe, call for more careful preparation and management, including frequently the early supply of liquid nourishment by the bowel after the operation. Removal of the tumor may relieve the kidneys where ureteral obstruction and interference with bladder drainage has caused nephritis. As to the method of operating the writer objects to removing the tubes and ovaries as frequently difficult and dangerous or ineffectual. He has tried several methods of hysterectomy, but considers ligation, with amputation through an abdominal incision at the internal os, followed by dropping the stump and closing the peritoneum over it, to be the method of election; yet, other plans may be followed to meet individual indications.

DR. WALTER H. PARCELS, Lewiston, read a paper,

OBSCURE TRAUMATIC LESIONS OF THE ENCEPHALON.

He called attention to the fact that in all head injuries the surgeon finds it difficult to make a prompt diagnosis of the amount of injury the encephalon had received. The prognosis should be guarded and he exemplified these statements by three cases in his practice. One from an apparent fracture at the base of the skull, recovery; another where the injury seemed slight, but death occurred in thirteen hours. Post-mortem showed no fracture, a rupture of blood vessels of pia mater, large blood clot with compression of brain. The third, a fall upon the forehead, concussion of brain, no fracture believed to exist, but unconsciousness, a chill and excessively high temperature following the third day and death three days later. No postmortem. What was the correct diagnosis? Was there a spicula of bone that had caused a lesion of the membrane and possibly a lesion of the cortical substance and acute meningitis? Wherein as a surgeon did he fail to do his duty in this case? The recognized surgical treatment is not fully detailed for the reason that we are waiting the revolution to be inaugurated by the perfection of the X rays, when a cathodic photograph will enable us to make a correct diagnosis and the trephine and suction pump will be the instruments used for spiculæ of bone and intracranial blood clots.

DR. J. W. PARK, Dauphin, read a paper,

THE MEDICO-LEGAL ASPECT OF EYE AND EAR CASES.

He confined his paper to accidental injuries. The points of interest were the kind of an examination, record of the case that should be made at the time, the kind of cases which should be examined by a specialist, the requirements of the general physician and specialist in medico-legal cases and their advantage to the plaintiff and defendant in suits for damages. He cited a case. He was sent by a road to examine the eyes of Mrs. S., who one year and three months before had been in a wreck and claimed that her present defective sight was due to the injuries. A careful examination of the fundus of each eye revealed dense opacity in the vitreous humor of both eyes, and no good view could be obtained; it was evidently a case of disseminated choroiditis. Hemorrhages into the vitreous may cause this, and this she claimed to be due to the blow received as the car turned over. The attending physician had not made an ophthalmoscopic examination, hence could not say how it looked, whether any hemorrhage were present. This was fatal to the road. All accidents involving the eyeball, cornea, lens, iris, fractures of the orbit or where vision may be impaired from intra or extra ocular injuries or diseases and in all cases where there are hemorrhage from the ears or signs of fracture of the skull involving the ear, where a careful examination for any previous existing deafness should be made and a minute record kept, in all these the physician should have in consultation a specialist. This should be immediately done for the benefit of the patient and for any legal complication that may arise. Take nothing for granted. In another case I am confident the deafness was due to a chronic catarrhal otitis media that had existed for years; but thousands of dollars were paid to settle. A third case of severe neuralgia of the superior maxillary nerve was sent to me by an attorney, claimed damages for the street crossings not being clear of ice, causing a fall, crushing in the malar bone and thus injuring the nerve and causing a chronic neuritis of the superior maxillary with pain in the ophthalmic branch. It had not in the least affected his vision. This was two years after the fall. He wanted me to discover something wrong so as to claim damages. No record was kept and no definite testimony was obtained. Let us try at least to show professional skill so that we may appear as experts and not figure heads. The requirements in a court of law are so numerous and complicated that I can refer to but a few. First, you should thoroughly understand the anatomy and physiology of the eye and ear, so as to answer questions relative to them in cases of injuries. Be familiar with the use of the ophthalmoscope; differentiate a diseased eye from a well one. Know the appearance of interstitial keratitis and that it is only syphilis, hereditary or acquired, that it will produce a peculiar condition of the cornea. You should know how to treat and save from blindness. Always state the probable results; make no promises of recoveries or length of time needed. In ear cases, be able to detect a simulating deafness from a real one. A teacher strikes a child with the flat of the hand; the parent takes it to a physician; he finds a ruptured drum. You may be asked how you know that it is not an old perforation. Traumatic perforations have traces of blood fresh or dried near the edges of the wound and in using inflation of the ear the air passes out easily into the auditory canal, while in pathologic perforations the exit is only under pressure and produces a whistling. In rupture from compressed air the rupture usually occurs at the periphery of the membrane, but in rupture from fracture of the bone as by blows, etc., it occurs in any part. This is accounted for as follows and is important in a medico-legal view. The drum membrane is generally contracted toward its center by the oto-muscular apparatus and often favored by chronic hyperplastic forms of catarrh, atrophy and cicatrices near the drum head, making this its weakest point where the rupture most always occurs. The ear must be carefully examined after injuries. An employe may claim damages for loss of hearing, claiming it from a blow on the ear, when really due to impacted cerumen. In one case I removed a lot of impacted cerumen and two dead bugs; hearing became normal and he never claimed damages after that. Precautionary measures, records, etc., apply equally to diseases as well as injuries of the ear. On the witness stand answer all questions clearly in plain terms. Illustrate by models so the jury can understand. In all cases make a thorough examination, keep a record in detail. If not capable of using the ophthalmoscope or ear speculum with reflected light, have a consultation and at once. Be well versed in the anatomy and physiology of the eye and ear; study both in health and disease; try to have much experience as without all this you had better not approach the witness stand. Always get the consent of the proper authorities before performing any operations; never promise any definite results or time.

DR. EDWIN ROSENTHAL, of Philadelphia, read a paper,

THE REDUCTION OF THE PERIOD OF INTUBATION BY SERUM TREATMENT OF LARYNGEAL DIPHTHERIA.

Dr. Rosenthal exhibited to the meeting the various strength, of antitoxic serum (the "Standard" 100 units to each c.c.; the "Potent" 250 units to each c.c.; and the "Extra Potent" 500 units to each c.c., of the H. K. Mulford Company's make) used by him at the present time in the treatment of those cases of diphtheria embodied in the present paper. Dr. Rosenthal also showed the culture tubes provided by the Board of Health, along with the cards giving the results of the bacteriologic examinations, made by the bacteriologic department of the Philadelphia Board of Health. He then in a series of admirably arranged comparative and statistic studies on the subject of intubation seeks to prove:

1. That the operation of intubation is the most desirable and more favorable than tracheotomy.

2. That with the serum treatment of diphtheria, tracheotomy will no longer be necessary.

3. That the serum treatment in diphtheria exerts a most marked and favorable reduction in the time the tube is worn in the larynx.

Pre-Serum Period, American. In a series of cases occurring in Dr. Rosenthal's practice there were 38 recoveries in 100 cases, and a mortality of 62 per cent. The tube was worn in 12 cases, 46 to 96 hours, mortality 31.40 per cent.; in 26 cases, 120 to 672 hours, mortality 68.60 per cent.; minimum duration 48 hours; maximum 672 hours; average time tube was worn

185¼ hours. Dillon Brown (June and July, 1887) places the time for final extubation at 5 days 3½ hours—that is, 123½ hours. O'Dwyer in 158 recoveries gives the average as 6 days, 2 or 3 hours (146 to 147 hours). Louis Fischer reports to the writer, 4 cases, 50 to 60 hours, 25 per cent.; 12 cases, 148 to 624 hours, 75 per cent.; minimum duration 50 hours; maximum 624 hours; average time 176⅛ hours.

Pre-Serum Treatment, European. Gustave Baer performed final extubation at the Zurich Children's Hospital as follows: 20 cases, 1 to 5 days, mortality 64.50 per cent.; 11 cases, 6 to 52 days, mortality 35.5 per cent. Prof. Von Ranke gives: Within 24 hours with a mortality of 8 per cent.; within 48 hours, 26 per cent.; within 72 hours, 18.50 per cent.; within 96 hours, 20 per cent.; over 96 hours, 27.50 per cent. Huebner in 25 cases of recovery has given 100 hours as an average when final extubation could be performed. Johann Bokai (Stephanie Kinder-hospital, Buda Pesth) reports 673 cases of intubation, of which 223 (33⅓ per cent.) were cured; of these 223 cases, 8 were tracheotomized, if we subtract these we have 215 cases. From ½ to 120 hours, 82.33 per cent.; from 120 to 240 hours, and 7 cases over 7 days, 17.67 per cent., showing a minimum of ¼ to 9 hours; maximum of 217 to 368 hours, average duration 79 hours.

Post-Serum Period, European. Huebner reports ten cases of intubation in diphtheria treated with antitoxin, with an average duration of 37 hours. In Von Ranke's cases the tube was removed within 24 hours in 18 cases, 18.5 per cent.; within 48 hours in 48 cases, 48.1 per cent.; within 72 hours in 11 cases, 11.1 per cent.; within 96 hours in 10 cases, 10 per cent.; over 96 hours in 3 cases, 3.7 per cent. Of 90 cases intubated by Bokai since the serum period, 45 recovered, 50 per cent. In this group of cases the minimum was 1 to 7 hours; the maximum 150 to 160 hours. To show the comparison between the two periods before and after serum treatment Bokai tabulates his cases. His table shows that the number in the 1st and 2nd 24 hours has conspicuously increased; the average being 61 hours against 79 hours before the serum period, therefore the serum period has lowered the duration of intubation 18 hours.

Post-Serum Period, American. O'Dwyer intubated 30 cases since the period of serum treatment of which 20 recovered, 66 per cent. The duration of 19 of these cases was from 8 to 119 hours 17 cases, 89½ per cent.; 120 hours, 2 cases 10½ per cent. Minimum, 8 hours; maximum, 120 hours; average, 83⅓ hours, as against 147 hours previous to antitoxin treatment. Therefore the serum treatment has lessened the time of incubation 63⅓ hours. Dr. O'Dwyer has informed the writer that the average duration of intubation has been 80 hours, making his reduction 67 hours. Louis Fischer reports 30 cases of recoveries after intubation: 19 cases, 16 to 116 hours, 63½ per cent.; 11 cases, 128 to 408 hours, 36⅔ per cent; minimum 16 hours; maximum 408 hours.

To show the comparison between the two periods before and after serum treatment, Dr. Rosenthal tabulates Fischer's cases similarly to those of Bokai, with the resulting summary. Before antitoxin: Percentage of cures before 120 hours, 25 per cent.; percentage of cures after 120 hours, 75 per cent. After antitoxin: Percentage of cures before 120 hours, 63½ per cent.; percentage of cures after 120 hours, 36⅔ per cent. This table shows that in the first three days the percentage of recovery has increased. The average number of hours in the pre-antitoxin period was 176⅛ hours. Post-antitoxin period was 108¾ hours, a reduction of 68 hours in the time the tube was worn. Dr. Rosenthal gives the result of 20 cases in his own practice; of these cases two died, 10 per cent. In those cases that recovered the duration of intubation was as follows: 12 cases, 12 to 103 hours, 66⅔ per cent; 6 cases, 146 to 291 hours, 33⅓ per cent. Average number of hours tube was worn, 114 1-6 hours. Compared with time pre-serum period, 185¼ hours, shows a reduction of 71 1-12 hours. Tabulated as in Bokai's cases: Pre-serum period, before 120 hours, 47.5 per cent.; after 120 hours, 52.5 per cent. Post-serum period, before 120 hours, 66⅔ per cent.; after 120 hours, 33⅓ per cent. In the operation of tracheotomy the writer has had no personal experience, but quotes E. Kohl, who gives the results of a study of 800 cases of recovery, and the difficulty he assumes to be when the final decanulement can not take place after three weeks. There were in 24 cases final removal in 3 days; 71 cases final removal in 4 days; 94 cases final removal in 5 days; 30 cases final removal in 6 to 10 days; 200 cases final removal in 10 to 30 days; 50 cases canula was worn 1 to 12 months. Bokai's experience in tracheotomy follows: In the majority of his cases (84 per cent.) he was enabled to withdraw the tube within 10 days, on the 6th or 7th day, 44½ per cent.; in 5 days, 23½ per cent. Kohl's and Bokai's cases placed in comparison give (tracheotomy per cent. of recoveries) Kohl, under 5 days, 23⅞ per cent.; 5 to 10 days, 37½ per cent.; over 10 days, 38⅞ per cent. Bokai, under 5 days, 23½ per cent.; 5 to 10 days, 60½ per cent.; over 10 days, 16 per cent. Intubation per cent. of recoveries: Bokai, under 5 days, 83.08 per cent.; 5 to 10 days, 16.02 per cent. O'Dwyer, under 5 days, 89.51 per cent.; 5 to 10 days, 10½ per cent. Fischer's, under 5 days, 63½ per cent.; 5 to 10 days, 16⅔ per cent.; over 10 days, 20 per cent. Rosenthal, under 5 days, 66⅔ per cent.; 5 to 10 days 22 2-9 per cent.; over 10 days, 11 1-9 per cent. Bokai's cases show the average duration of intubation to be 79.6 hours, and in the majority of his cases (83.08 per cent.) final extubation was performed within 5 days (120 hours) even though a relatively large number in 217 cases, 42 cases, 16.02 per cent. were intubated over 5 days, without the longer intubation being in any way dangerous. Under the serum treatment no alarming symptoms (decubitus, etc.) were manifested: for that reason but one conclusion can be borne, that the operation of intubation is alone sufficient, and the secondary operation of tracheotomy can be avoided. O'Dwyer's cases show the average duration of intubation to be about 80 hours, and in almost all his cases final extubation was performed within five days. Dr. Rosenthal quotes from a letter received from Dr. O'Dwyer, which most forcibly demonstrates the utility of the serum treatment: "My results up to the present time in 500 cases in a series of hundreds: First hundred (largely experimental), 17 recoveries; second hundred, 27 recoveries; third hundred, 30 recoveries; fourth hundred, 26 recoveries; fifth hundred, 39 recoveries. The marked increase in the last series was due to antitoxin, in thirty cases of which there were 20 recoveries. In the 70 preceding cases in which no antitoxin was used there were only 19 recoveries, which was about the same percentage as in all the other series."

O'Dwyer's statistics therefore substantiate Dr. Rosenthal's. From a mortality ranging from 83 per cent. to 70 per cent. before the serum period, his reduction has been to 30 per cent., and the reduction in the time the tube was worn was 67 hours. Fischer's cases show the same characteristics as in O'Dwyer's cases and Dr. Rosenthal's, the average duration of intubation was 108¾ hours and in 63⅔ per cent. final extubation was performed within 120 hours. In one of Fischer's cases seen with Prof. H. J. Boldt, intubation and extubation was performed five different times during a period of 408 hours, which has somewhat raised his average. However, the reduction in the time the tube was worn is equal to O'Dwyer's and Dr. Rosenthal's, and averages 68 1-10 hours. The relatively large numbers (in 30 cases, 11 cases, 36⅔) were intubated over five days (120 hours). No dangerous symptoms arose necessitating tracheotomy. Intubation with the serum treatment has been sufficient in Fischer's hands to perform the cure. Dr. Rosenthal's own series of cases show the average duration of intubation with serum treatment to be 114 1-6 hours, and in the majority of the cases (12) final extubation was performed within 5 days. In his long cases he has never seen any indications that would call for tracheotomy, and in one of his cases, intubation and extubation were performed very frequently with favorable results. In his paper Dr. Rosenthal refrains from mentioning those cases of laryngeal diphtheria treated with antitoxin, which recovered without the aid of intubation. These cases were in a greater number than those operated upon, and the reason unquestionably has been due to the early use of antitoxin.

The writer's conclusions after using the serum treatment in the last eighteen months are as follows: "1. The duration of intubation varies. In the cases quoted extubation has been made in from ½ to 408 hours. The rule, however, in the majority of cases is that final extubation can be performed within 120 hours. 2. The average length of intubation has been reduced in a marked degree: Bokai, 18 hours; Von Ranke, 25½ hours; O'Dwyer, 67 hours; Fischer, 68 1-20 hours; Rosenthal, 71 1-6 hours. 3. The operation of tracheotomy is avoided, intubation being sufficient to cure, even in the long cases, 5 days and over, there were no symptoms necessitating such procedure. 4. The use of the serum has placed intubation on a definite basis: (a) by lowering the mortality; (b) by shortening the period of intubation; (c) by avoiding the major operation, tracheotomy."

THE PRESIDENT—The paper of Dr. Rosenthal is open for discussion.

DR. NOBLE—I would like to hear from Dr. Welsh in the discussion of this paper.

DR. WELSH, of Philadelphia—I did not intend to take part in this discussion, but I am obliged to say that my experience is not in accord with the author of the paper. He contends in the paper that the tube may be removed much earlier when antitoxin is used than when it is not. He does not know that in order to determine that fact it is necessary very frequent

experiments should be made every day in removing the tube, both in the non-antitoxin cases and in the antitoxin cases, to the earliest period of the disease when the patient can get along without the tube. Now, no such experiment has been made. Before the introduction of antitoxin, we were told that it was necessary that the tube should remain in for six, seven or eight days. O'Dwyer's instructions are that the tube may be removed on the seventh day. Now, I think that was pretty generally followed before the introduction of antitoxin. So it is not known just how long a patient can get along without a tube. That can only be ascertained by removing the tube and learning. Now, since antitoxin has come into practical use, some writers claim that the patient can get along earlier without the tube; and they have found by experiment that in some cases they get along without. So I say that this conclusion is scarcely warranted, unless experiment is made of the two cases precisely in the eame way. I have tried removing the tube at an earlier period of the disease; but have found that we had to introduce the tube again repeatedly. We first thought that we could get along without the tube after having worn it four days, with the use of the antitoxin; but we found that we had often to hasten to get the tube back, and save the child's life. A patient in one of the wards of a hospital in the city of Philadelphia wore a tube three months. During the three months the tube was removed or coughed up as often as seventy times; and yet it was impossible to get along without it. The child would often run into the sleeping room of the resident physician, with its night clothes on, having coughed it out and carrying it in its hand. The physician would reintroduce the tube and the child would go back to bed. I have seen the child and I am sure it would not have lived fifteen minutes if the tube has not been reintroduced, and, as I stated, that child was required to wear that tube three months. Frequently the tube has to be used as long as three weeks, even where the antitoxin is used. Not very long ago a patient was sent to the hospital, having received antitoxin before its introduction, a number of hours larer. I do not think it was as long as twenty-four hours after that intubation was necessary. It was found to give a temporary relief. The child was then sent to the hospital in that condition. It continued to use the tube; in six days we thought we would remove it and did so. Serious symptoms at once developed, and the tube was reintroduced, and the child wore the tube four days longer. We thought then we could remove the tube and did so. The resident physician told me he had to hurry with all the haste possible from some other part of the institution in order to put the tube back and save the child. One morning, about the eleventh day, at 5 o'clock, the child coughed up the tube. Its condition at once became serious and the nurse telephoned over to the other building for the resident physician. Before he got there that child was dead. It was an antitoxin case. I have very frequently met with cases where the tube is coughed up and the child gets along very well, no matter whether the child has taken the antitoxin or not. I have frequently had children do pretty well after the tube was introduced and taken out immediately. They breathed better for a time.

DR. T. D. DAVIS, of Pittsburg—I have had considerable experience personally in the use of antitoxin. We make it in Pittsburg ourselves and we know it is good. We know its strength and we know the results. At the last meeting of the Allegheny County Medical Society the subject was up before the members. There was not one single remark made by any doctor present derogatory to its great efficiency. Some of the cases reported were a little short of miraculous. In my own personal practice I have seen two cases where, as it were, the child was snatched as "a brand from the burning" by its use. There are various ways of using it. Because a man says a case has been treated with antitoxin and dies it does not follow, therefore that antitoxin was of no value or that it could not have been made of greater use in that individual case. A great deal depends on how it is used, the quality and quantity used and the time of use. If you have a patient suffering with malaria and give one small dose of quinin, you treat the patient with quinin, but how? The same applies to the treatment of diphtheria with antitoxin. If you administer 500 units when it requires 5,000 units to neutralize the poisons, your patient will die; not on account of the antitoxin but because you have not given a sufficient amount. If our theory in regard to the serum is correct it is one of the few remedies that is beneficial whether it does any good to the diphtheria or not. It not only is harmless but it is beneficial. You are putting food into the body. You can not possibly cause injury by it, if it is pure and good. You absolutely benefit, in the same way as you would by injecting milk or beef tea. Therefore you are not using a dangerous remedy. In one of the cases reported at the Allegheny County Society, 142 cubic centimeters were used in the case of a child 7 years of age, within thirty-six hours, with a recovery. Antitoxin does not propose to remove spasm of the larynx, nor reduce congestion or an inflamed condition. Antitoxin proposes to remove the diphtheria and not its results. I know when I use it, when the membranes have disappeared. I am thus free to say whether the tube can be removed or not. I know that I have never seen a case, by the use of antitoxin, that lasted over forty-eight hours. Now, if this membrane was in the larynx and the intubation was used solely on account of the membrane, then I would take it away. If there was spasm of the larynx and congestion remained, then such would have to be treated. The antitoxin would have no effect on such a case, as it only cures the diphtheria.

DR. ROSENTHAL—The expression made by my colleage from Pittsburg is exactly what I wished to make: While antitoxin is a specific for diphtheria, you must know how to use it. If you give one administration the child may not recover; I have seen recoveries in laryngeal diphtheria that were intubated in almost hopeless cases. Therefore I am ready to stand by the antitoxin and to go down with the antitoxin. While it is of signal importance to employ antitoxin as early as possible, I never despair, even when called late, but in such cases give larger amounts of antitoxin. 2,000 units as a commencing dose.

The antitoxin which I have exhibited here is presented in three grades of strength. Let physicians use it as I have told them, and if there are any failures let them be attributed to me. I do not know about the Philadelphia Municipal Hospital, but it stands unique in regard to its mortality list, which is the greatest in the world to-day, and is the only institution that has not reduced its mortality since the introduction of antitoxin. I have presented a number of cases where my conclusions are proven and if the opportunity were offered I could demonstrate the same at the Philadelphia Municipal Hospital. I have daily reports made with analysis of urine, etc.; in no case has albuminaria been noted, and I have not noted any joint pains, and in but few instances a slight urticaria, which soon disappeared, and which I have noted in cases treated by me before the serum period. Dr. J. S. Billings, Jr., has reported in the *Medical Record*, April 25, that the "antitoxin treatment has no deleterious effects upon the blood corpuscles. On the contrary, it seems to prevent degenerative changes which would otherwise be brought about. A knowledge of the duration of the period of intubation ought to have some value. When I inject the antitoxin in insufficient quantity, and ascertain the result, I repeat with an increased number of units, and when the symptoms are favorable I take the tube out. In one case it remained 148 hours, but it was not due to antitoxin. I do not like figures that are incorrect, and long to have them right. When you have used antitoxin and on the second day the temperature rises again it is an indication of insufficient antitoxin having been given, and indicates the further need of antitoxin, and I give it in double or treble amounts; if my first injection was 1,000 units I administer 2,000 units, and if the third injection is necessary, 3,000 units. To use antitoxin for other complications, you may as well expect to give a dose quinin, with beneficial results, when a man has abscess of the liver. But antitoxin will cure diphtheria, and I know that it decreases the mortality, and that it reduces the time for the tube to be worn. Dr. Fischer and Dr. O'Dwyer, of New York, the originator of the tubes which I have shown, will stand by the same thing.

DR. W. B. ULRICH—Before the Doctor takes his seat I would like to have this question answered by him and Dr. Welsh: Have you ever known any harmful results from the use of antitoxin? I, myself, would not feel with my experience in its use, that I had done my duty in not using antitoxin in diphtheria, notwithstanding my skeptical views when antitoxin was first introduced. I would like to have this question answered before the society.

DR. ROSENTHAL—I have used as high as 13,000 units in one case with curative results.

DR. ULRICH—Have you had any harmful results?

DR. ROSENTHAL—No, sir. Neither have I found any by examination of the urine. There is a difference in the injection, depending upon the kind of antitoxin you use. If you use Gibier's antitoxin you can use enormous amounts with scarcely any effect.

DR. W. B. ULRICH—What kind of antitoxic serum do you use?

DR. ROSENTHAL—I use Mulford's exclusively in my practice. Of the Mulford product you can secure three different strengths. The "Standard," containing 100 units to each c.c., the "Potent," containing 250 units to each c.c., and the "Extra Potent," containing 500 units to each c.c. Each of these strengths being supplied in vials of 500, 1,000 and 2,000

units. The charts I have shown the society were treated with the "Potent" and "Extra Potent." In one case the tube was withdrawn within seventy hours, and the child was cured; in the other case within seventy-three hours, with like results. I have never seen a single unfavorable symptom where Mulford's antitoxin was used, and I now use it exclusively, as it has given me more prompt results than any antitoxin I have ever employed.

DR. WELSH—I have never seen any fatal results; but I have seen some complications arising from urticaria and joint pains.

DR. W. M. BEACH, of Pittsburg, read a paper,

SPECIAL FORMS OF RECTAL FISTULÆ.

Only within the last decade has there been any considerable enthusiasm evinced by the medical profession in the study of rectal diseases. Now every important city has one or more reputable physicians interested in this line of work, thereby adding to the list of legitimate specialties. I do not attempt any originality, but rather to arouse your interest in a field of research much neglected and relegated to quackery. It is generally conceded that next to hemorrhoids, rectal fistulæ most frequently claim the attention of the rectal specialist. Though the pathology of fistula in ano is familiar to all, and the subject trite, it is the purpose to direct attention to "special forms" and the surgical procedure toward a cure. Fistulæ with surface openings will receive no consideration, but rather the blind internal fistula with a rectal orifice and those connecting two cavities. Two reasons obtain for presenting these forms: 1, the frequent obscurity of symptoms and lesion; 2, the difficulty in obliterating the abnormal canal. Many an obscure case of pelvic disease will stand out in clear light through a skillful exploration of the rectum. The uterus and appendages, or posterior urethra, frequently bear the onus of some disease of the rectum, trifling or otherwise, and a failure to cure inevitably ensues. The internal blind, or the recto-perineal blind fistulæ are chiefly found in the anterior wall of rectum, though the submucous variety may occur in any portion, and the opening, usually small, is found in a pocket just above the internal sphincter. Periodically, induration may occur on the surface, which is an aid in locating the sinus, that can be traced downward and forward with a bent probe. This condition is not rare, but often overlooked. The recto-urethral, or recto-vaginal fistula, is the second form I wish to present, and is easy of diagnosis but difficult to cure, the former being the reverse. The subjective symptoms are certain in the latter for the most part, and leave no doubt in the mind of the physician. The science of obstetrics in its evolution plays no small part as an etiologic factor. The middle of the dying century tolerated a practice of non-interference in the conduct of confinement resulting in anterior vaginal fistulæ the result of sloughing tissues from prolonged pressure of the fetus in the parturient canal. Latterly an opposite extreme obtains; the too frequent, not to say unskillful, application of traction instruments produce extensive perineal lacerations, often obliterating the recto-vaginal body attended with paralysis of the sphincter, and the traumatism may mark the beginning of a recto-vaginal fistula. Lithotomy is not without its danger in producing rectal fistulæ, and may be mentioned as an important factor. Thrusting the knife through the membranous urethra, the rectum may be punctured, leading to a permanent tract. This accident was probably more frequent prior to the use of anesthetics, agents so conducive to calm deliberation in surgical manipulation. Abscess is by far the most frequent source of rectal fistulæ; in fact, most authors believe it to be a *sine qua non* in their production. Perirectal abscess may arise from a constitutional diathesis, or a traumatism surgical or otherwise. The point of least resistance is usually toward the rectal cavity, becoming a blind internal fistula. The following illustrative case came under my observation: L. S., aged 35, occupation merchant, family history good, applied to me for the relief of some obscure rectal trouble. He had considerable urethral irritation for which he had been treated over a year, his physician supposing it to be of gonorrheal origin, doubting the emphatic denials of his patient. Careful questioning revealed the fact that shortly before his trouble he had fallen astride some wares in the basement of his store, followed in a few days by pain, heat and swelling in the perineum, which suddenly subsided on the appearance of a rectal and urethral discharge, the latter more profuse. At this stage he consulted another physician, who faithfully treated the supposed gonorrheal discharge, which soon stopped. Pain in back and hips and a rectal discharge still persisted, but he was assured that the rectum was healthy, the symptoms being a result of the past urethral catarrrh. He came to me much discouraged. By aid of a speculum and an electric lamp, a thorough search was made of the lower three inches of the rectum. I found nothing pathologic. A third trial about two weeks afterward was also likely to prove futile, but when about to withdraw the speculum, I made a pressure on the perineum, which forced purulent fluid through a minute orifice on the anterior wall of the rectum. A bent probe entering this brought the exclamation: "You have touched the spot, Doctor," and the instrument passed into a large cavity as deep as the urethra, as was subsequently demonstrated by the operation, which consisted of free incision and dissection. The patient fully recovered, all nervousness and urethral irritation disappearing. Here, then, was a perineal abscess, the result of traumatism, opening both into the urethra and rectum, the urethral orifice closing. Microscopy revealed no gonococci. The following case is rare, only a few of the kind having been reported. Wyeth reports one, to whom I am indebted for the technique of the operation. This case was the result of lithotomy.

J. W., aged 55, occupation, cashier. When 9 years old lithotomy was performed by a prominent Pittsburg surgeon and relieved successfully of a large calculus. His recovery was uneventful, but soon after patient noticed unnatural sensations which convinced him of a connection between his rectum and urethra. Urine passed in large amounts per rectum. Gas and fecal matter per urethra. He consulted various physicians who assured him that such was not probably the case, nor consistent with his apparent good health, and after several years of futile medication he suspended treatment. In October, 1895, after a lapse of twenty years, his condition growing worse, he consulted his physician, Dr. E. L. Neff, of Allegheny, who found a communication between the urethra and rectum by injecting into the urethra several ounces of a weak solution of permanganate of potash. The fluid was found in the rectum. Dr. Neff kindly referred the case to me, when another examination was made. The finger revealed a normal rectum except above the sphincter anteriorly where it passed into a deep sulcus. Passing a sound through the urethra and inserting a speclum into the rectum, a probe readily demonstrated a recto-urethral fistula, the urethral opening being in the membraneous portion. The fistula was fully one-half inch in diameter throughout, since the finger passed through readily. A solution of hydrogen peroxid was then thrown into the urethra and readily appeared in the rectum. The wall of the fistula was dark and callus and the rectal orifice more or less irregular. There was no doubt in the diagnosis of a large patulous tract between these cavities. Nov. 2, 1895, Drs. Neff and Adair assisting, an attempt was made to close the fistula. Two crescentic flaps were made about the fistular orifice, the primary incision about a half inch from the margin going through the muscular coats of the bowel. The flaps were dissected up to within an eighth of an inch of the margin between which and the opening the flaps were to receive their nutrition; they were turned toward each other, the rectal mucous membrane becoming the urethral floor, the raw surface being in the bowel. A line of catgut sutures was placed about a fifth of an inch apart, a rubber tube was placed in rectum for the escape of gas, and a silver catheter retained for ten days through which the bladder was flooded with Thiersch's solution each time after the patient voided urine. The wound healed kindly and promptly, and a complete obliteration of the fistula was assured, but a few months afterward patient still complained of small quantities of urine in rectum and gas in urethra, which was only occasional, however. Since the operation, no fecal matter has appeared through the urethra and other abnormal phenomena very much modified. An examination showed a minute orifice at the upper angle of the wound which failed to unite. The patient is anxious to have this closed which he will allow us to do the coming autumn, when we hope to fully succeed. There was no extravasation of urine and his general health is much improved. The importance of the rectal tube can not be overlooked in promoting the healing process with a view of obliterating fistula between rectum and urethra, or vagina. The neglect of this precaution has caused many failures in closing recto-vaginal fistula on account of gas infecting the wound.

(To be continued.)

American Pediatric Society.

Eighth Annual Meeting held at Montreal, Canada, May 25, 26 and 27, 1896.

Owing to the necessary absence of the President, DR. JOSEPH O'DWYER, the first Vice-President, DR. JAMES C. WILSON, presided. The first session was opened by the reading of the President's address, entitled

THE EVOLUTION OF INTUBATION.

This was prepared at the request of the Council and was a paper of interest as it described the labors which Dr. O'Dwyer pursued with untiring devotion to a great idea through five long years. A bivalve tube was first used but after three years of continuous effort it was abandoned and experiments were begun with the solid tube. The paper described the various experiments made with alternating failure and success, until at last obstacle after obstacle had been overcome, and imperfection after imperfection had been removed. As a result of this patient toil, perfected instruments were given to the profession, a very rare thing in the history of medicine. The various steps taken in the attaining of this result were narrated with the simplicity and modesty which has always characterized the literary work of Dr. O'Dwyer.

The first paper was read by DR. GEORGE N. ACKER, of Washington, on "Gangrene of the Lung following Typhoid Fever." DR. J. H. FRUITNIGHT, of New York, read a paper on "Malignant Endocarditis" and presented a specimen. As the bacteriologic examination showed the condition to be due to the presence of streptococci, the author advocated the use of streptococcus antitoxin serum in such cases.

At the second session, DR. A. H. WENTWORTH, of Boston, read an exhaustive paper on "Lumbar Puncture" and reported twenty-nine cases. He affirmed that while normal cerebro-spinal fluids contain neither fibrin nor cells and is always clear, it is always cloudy in cases of meningitis, though the cloudiness is sometimes very slight. This is caused by cells, the character of the cells differing with the variety of meningitis. The operation, the author believes, offers a valuable means of diagnosis. For such purpose, however, the microscope is essential and inoculation experiments are also of value. This was followed by a paper on "Tapping the Vertebral Canal," with remarks on local treatment for tubercular meningitis, by DR. AUGUSTUS CAILLE, of New York. He reported twenty-one cases, and believed that a study of the cases reported up to the present time will certainly convince the most skeptical that Quincke's puncture is of positive value as a method of diagnosis. It is simple and usually easy of performance. In two cases Dr. Caillé injected antiseptics into the sub-arachnoid space but without material results. He proposes in some future case to lay bare the dura by removing a button of bone and irrigating from a lumbar puncture upward through an opening in the dura.

DR. C. G. JENNINGS, of Detroit, also read a valuable paper "Lumbar Puncture," and reported practical experience.

DR. FLOYD M. CRANDALL, of New York, read a paper on the "Occurrence of Influenza in Children" and reported local epidemics.

DR. SAMUEL S. ADAMS, of Washington, reported an extremely interesting case of "Temporary Insanity following Typhoid Fever."

DR. FREDERICK A. PACKARD, of Philadelphia, reported a case of "Endothelioma of the Brain with Atrophy of the Paralyzed Members."

DR. HENRY JACKSON, of Boston, read a paper on "Nasal Feeding in Diphtheria," in which he advocated feeding by means of a soft tube passed through the nose into the esophagus in certain cases of diphtheria. As this can be done with ease, it does much in preventing exhaustion of the child's strength.

DR. WILLIAM OSLER, of Baltimore, read a paper on the

CLASSIFICATION OF TICS OR HABIT MOVEMENTS,

He made the following classification: 1. Simple tic or habit spasm. 2. Tics with superadded psychic phenomena; maladie de la tic convulsif; or Gilles de la Tourette's disease. 3. Complex coördinate tics. 4. Tic psychique. An imperative idea is the psychic equivalent of, and has an origin similar to, the motor tic. Each of these subdivisions was elaborated, and illustrated by practical examples.

The third session was devoted to the antitoxin treatment of diphtheria. The report of the Collective Investigation Committee of the Society upon the results of the antitoxin treatment in private practice was read. Over five thousand cases were reported, the results being, on the whole, far more favorable than any extended reports have thus far appeared. A complete report will soon be published in full.

DR. A. F. PACKARD reported favorable results of the antitoxin treatment and DR. S. S. ADAMS read a paper on the "Comparative Results of the Treatment of Diphtheria with and without Antitoxin in the District of Columbia." It appears that the death rate from diphtheria in the District of Columbia since the introduction of antitoxin has materially diminished.

DR. A. SIEBERT of New York, reak a paper on

SUDDEN DEATH AFTER ANTITOXIN INJECTIONS.

He reported a series of striking experiments which showed that the injection into animals of carbolic acid even in very weak solution was constantly followed by most characteristic spasmodic movements. Another series of experiments was made to determine the effects of subcutaneous injections of air. The results seem to show that antitoxin can contain but infinitesimal quantities of carbolic acid. They also render the proposition reasorable that the few sudden deaths reported after the injection of antitoxin might be due to the injection at the same time of air.

The general discussion elicited by these papers was extremely interesting and showed unanimous and very strong sentiment in favor of antitoxin.

At the fourth session, DR. ROWLAND G. FREEMAN, of New York, read a paper on "Low Temperature Pasteurization of Milk at about 67 degrees C." He proved that this temperature was sufficient to kill numerous pathogenic bacteria and various atmospheric bacteria, and referred to the importance of avoiding unnecessary heat in the preparation of milk for infant's use. He presented a new apparatus of simple construction, designed to pasteurize milk at 67 C. DR. CHARLES W. TOWNSEND, of Boston, reported several cases of "Thigh-Friction in Infants." DR. WILLIAM P. NORTHRUP, of New York, reported a most interesting case of "Apparently Relapsing Cerebro-spinal Meningitis" followed by death and autopsy, which elicited a warm discussion on the pathology and diagnosis of meningitis. DR. HENRY LAFLEUR, of Montreal, reported a case of "Insolation in an Infant of Thirteen Months." DR. A. D. BLACKADER, of Montreal, reported a case of "Enlargement of the Liver" in a young child with symptoms closely resembling those of typhoid fever.

Papers were read by title by DRS. B. K. RATCHFORD, of Cincinnati; F. FORCHHEIMER, of Cincinnati; IRVING M. SNOW, of Buffalo, and HENRY D. CHAPIN, of New York.

The last session was devoted to the presentation of pathologic specimens, specimens being presented by Drs. Rotch, Holt, Caillé, Adams, Packard, Acker, Freeman, and Townsend.

In the executive meeting, the following officers were elected for the coming year:

President, Dr. Samuel S. Adams, Washington, D. C.; first vice-president, Dr. W. S. Christopher, Chicago; second vice-president, Dr. Charles W. Putnam, Boston; secretary, Dr. Frederick A. Packard, Philadelphia; treasurer, Dr. Charles W. Townsend, Boston; recorder and editor, Dr. Floyd M. Crandall, New York; member of council, Dr. William Osler, Baltimore; chairman of council, Dr. William P. Northrup, New York.

The Ohio State Medical Society.

Annual Meeting held at Columbus, May 27-29, 1896.

The Society was called to order in the Hall of the House of Representatives, Columbus, May 27, the President, DR. MILLIKIN, in the chair. An address of welcome was delivered by MR. GILBARGER, and responded to by the President of the Society.

DR. JAMES E. PILCHER, Captain Medical Department U. S. A., Columbus, read a paper on

THE PRESENT STATUS OF MILITARY MEDICINE AND SURGERY AND ITS RELATION TO GENERAL PRACTICE.

Military medicine and surgery are simply medicine and surgery adapted to the needs of military work. The relative importance of medicine and surgery in military work may be deducted from the fact that less than one-third of the fatalities in the late war were due to surgical causes. The first duty of one in the medical department of the army is to investigate the sanitary conditions and report fully. In military work the lightning operators are more necessary than in civil surgery. The engagements of the future will probably be more rapid than in the past and it will be impossible to remove the wounded from the field before treatment. The troops, therefore, must be instructed in the art of self-aid. The removal of the wounded from the field will probably hereafter be done after the engagement. This is done by the hospital corps, a band of men under the direction of the Medical Department. These men have charge of the nursing in the hospitals.

DR. WILLIAM THOMAS CORLETT, Cleveland—"Modern Status of Specific Urethritis, with its Treatment." The essayist took up specific urethritis in the male, its course, complications and treatment. The best results were obtained from the use of permanganate of potassium, gr. ss-i to ten ounces of water. Irrigation had also been used with advantage. The water should be 100 degrees F. The disease is self-limited, and we

know no means by which the gonococcus may be quickly destroyed without irreparable damage to the urethra. A free discharge of pus favors the elimination of the poison. Later in the disease topical applications hasten recovery, which may be regarded as complete when upon repeated examination the organism can not be found.

DR. F. F. LAWRENCE, Columbus—"Salpingitis." Salpingitis is always a secondary disease. Gonorrhea plays a role in etiology which has been generally overestimated. Other causes are abortion, the use of unclean instruments, etc. Some cases are largely due to a peculiar condition of the patient, in which there is a tendency to suppuration on the slightest injury or inflammation. Inflammation of the tube can rarely if ever be separated from ovaritis. Salpingitis should never be operated upon, except symptoms of infection are manifest. It is curable without operation and should be so treated. Acute septic salpingitis is always dangerous and often rapidly fatal, and should be operated upon if the patient has a chance of recovery. Chronic suppurative salpingitis should always be removed. Tubercular salpingitis, if no other structures are involved, should be removed. The essayist condemned the attempt to do too much, for instance, the removal of the uterus when the tubes or ovaries only are affected.

DR. GEORGE W. CRILE, Cleveland—"Research into the Technique of Laryngeal Operations, with Report of Four Successful Total Extirpations." The technique was based upon operations upon dogs and the cadaver. The cases reported comprised three of carcinoma and one of tuberculosis. The Doctor advised the introduction of the tracheal tube before operation, and after operation the food should be taken through the tube. In five neurotics there was no nausea from the tracheal tube. The radical operation is sometimes indicated for relief even when cure is impossible. When early recognized, the result of operation will probably be favorable, because the disease does not readily extend through the cartilage. Atropia hypodermatically guards the heart but not the respiration. Cocain, on the other hand, locally applied, guards both the heart and respiration absolutely, even though general anesthetics are employed.

SECOND DAY—MORNING SESSION.

DR. L. B. TUCKERMAN, Cleveland—"Is It Grip, or What?" The Doctor had recently met an unusual number of cases of weak heart with no appreciable lesion of either the heart or lungs. The depression was marked and the treatment used was aperient and tonic. The phenomena seemed to be of nervous origin, and the essayist suggested the name *bradycardia febrilis*, if the condition is not grip or an obscure case of malaria.

DR. S. S. HALDERMAN, Portsmouth—"Antitoxin in the Treatment of Diphtheria with Report of Fatal Termination of Case after Receiving Prophylactic Dose." (Published in the JOURNAL of June 13, p. 1168.)

DR. J. E. FACKLER, Versailles—"The Treatment of Diphtheria."

Early in the Doctor's experience he was impressed with the favorable results obtained from the use of chlorin in the treatment of certain zymotic diseases, notably, typhoid fever. Reasoning from analogy, the use of it was extended to the treatment of diphtheria, and for more than a quarter of a century the chlorin treatment has proven uniformly successful in the practice of the author and of neighboring physicians who have made use of the remedy. Not a case under this treatment has proven fatal thus far.

DR. R. E. SKEEL, Cleveland—"The Etiology and Prophylaxis of Puerperal Sepsis."

Puerperal sepsis is largely due to the action of infectious material to be found normally in the body. Thus, the vagina normally contains microörganisms, inhibited in action during health by the normal secretions. Any dead material as following abortion, should be promptly removed. For the same reason puerpera should sit in the erect position during micturition and defecation, if possible. Antisepsis and asepsis should be observed, beginning with the bath and clean clothing.

DR. M. STAMM, Fremont—"Intestinal Obstruction, Some Diagnostic Points and Treatment."

Pain is not intense and continual in the initial stage. Collapse is generally absent or much less frequent than in strangulation. The inflated coils and their peristaltic movement can be readily detected at the seat of obstruction in the distended abdomen. Some trouble in connection with the bowels has generally preceded the onset of ileus. The Doctor then presented the list of questions furnished by Obalinski. Treatment: With rest, diet and small doses of opium a great many cases of circumscribed peritonitis do well, and even some cases of diffuse peritonitis will recover. If the presence of pus can be detected an incision should be made in that region and not in the median line. In cases of obstinate vomiting, lavage of the stomach promises great relief. Where the heart begins to fail and to cover the great loss of fluids from the tissues, infusion of salt water often proves of great benefit. Meteorism may call for puncture with the aspirator or hypodermic needle. If with the general signs of obstruction we find a large distended coil, with local meteorism and increased peristalsis, little doubt can exist it is a case of strangulation or volvulus, and we should resort to laparotomy at once. If a foreign body causes obstruction, its extraction by incision would be the proper procedure. In cases of stricture, anastomosis or resection is indicated. If due to compression by a tumor, enterotomy or resection are the preferable methods. In cases where there is some doubt about the nature and seat of obstruction, enterotomy or a fecal fistula would present the best temporary hope. In intussusception or invagination, we may at first try injection of large quantities of water in the genu-pectoral position, or insufflation of air into the rectum. If the invagination is low down, massage, sponges attached to a probe or stem, or the finger alone, may be employed for its reduction. Should all of this prove of no avail, disinvagination by laparotomy will have to be attempted, and where this method fails or where gangrene is already present resection would be the only expedient.

The President, DR. DAN MILLIKIN, then read the annual address

A STUDY IN CREDULITY.

The essayist traced the course of credulity in man from the first or primeval state, when man was simple in his tastes like the child and the savage, to the advanced stages of civilization of to-day, showing wherein the people of the present are possessed with unscientific ideas, superstitions, regarding the nature and cure of disease. The President declared that superstition found its food in disease, and that it was easy enough for the savage to clothe disease in some poetic or simple idea, making disease some terrible monster or demon. But even in the higher civilization of the no distant past, and even in the present, people regard disease as some terrible "it" traveling from one part of the body to another, which can only be cured by some imaginary charm or superstitious custom. The Doctors are not proof against the great wave of superstition or credulity that possesses the people, for it was only a few years ago that bleeding was regarded as the means by which disease could be let out of the body, or that intolerable drugs were poured down throats until either the disease had to go or the soul of the patient. The physician is not alone responsible for these superstitious ideas prevailing but the surgeon also clings to some of the old ideas and practices in his profession and can give no excuse for their existence: as for instance, his use of chloroform. The old credulity breaks out anew at every new discovery in bacteriology. The essayist then paid his respects to the patent medicines, condemning without stint many proprietary compounds. The remedy for all this credulity or safe-guard against more of it, is that the doctors should become scientific, should investigate for themselves, should become closer students of materia medica. The medical profession is not a credulous profession as a whole, and the doctors of the present and future should work out the principles of their science as the scientists in other branches work out the laws and hypotheses.

DR. B. D. MILLIKIN, Cleveland:

SOME OF THE ACCIDENTS OF CATARACT OPERATION.

Of the class of accidents occurring at the time of operation, we have: First, the iris falling before or upon the knife blade; second, the incision into the cornea may be too small to admit the escape of the lens; third, the escape of the vitreous; fourth, luxation of the lens; fifth, hemorrhage; sixth, prolapse of the iris, and seventh, infection. Those accidents occurring after an operation has been completed, may be enumerated as follows: First, prolapse of the iris; second, hemorrhage; third, accidents of more or less gravity resulting from the restlessness of the patient or striking against foreign substances, such as the hands, bed posts, etc.; fourth, infection.

DR. M. ROSENWASSER, Cleveland:

A PLEA AGAINST THE MEDDLESOME TREATMENT OF ACUTE GONORRHEA IN WOMEN.

The title explains quite well the nature of the paper. The author condemned the "early and thorough" treatment as meddlesome and mischievous for the following reasons: It is based on a pathology now discarded as crude and imperfect; it is not applicable to all the tissues simultaneously affected, and hence, it is no cure; the results at the end of the acute stage, are no better than those of a more rational though less

exacting treatment; it is cruelly painful and often dangerous, requiring an anesthetic for its proper execution; it is impracticable, even in the hands of an expert; though the treatment is irrational, inefficient, severe and dangerous; the physician who does not practice it is stigmatized as old fashioned, negligent, and indifferent to the interests of his patient.

Kentucky State Medical Society.

Forty-first Annual Meeting, held at Lebanon, June 10-12, 1896.

FIRST DAY—MORNING SESSION.

The meeting was called to order by the President, DR. JOHN A. LEWIS, of Georgetown, at 11 A.M.

The opening prayer was made by Rev. Dr. Bracken, of Lebanon.

The address of welcome was delivered by B. J. LANCASTER, of Lebanon. He referred feelingly to the fact that forty years ago the Kentucky State Medical Society met in that city, and reminded the members that his instructions were to extend the welcome on behalf of the citizens even more heartily than so many years ago, if such were possible. He referred also to the fact that Dr. W. W. Cleaver, a citizen of Lebanon, now present, was perhaps the only one who was present forty years ago.

The Chairman of the Committee of Arrangements, DR. R. C. MCCHORD, welcomed the members on behalf of the Marion County Medical Society.

DR. STEELE BAILEY, the Permanent Secretary, referred to the sound condition of the Society, and said that at the present time there were more county medical Societies throughout the State than ever before and this was attributed to the efforts of the State Society. He referred to the fact that there had been three deaths and four resignations during the year.

On motion of Dr. McCormack, who presented a resolution from the State Board of Health, the President will appoint a committee of five to urge upon the Legislature at its next meeting a statute to punish the crime of abortion.

A symposium of papers upon Bright's disease was begun by a paper from DR. E. S. SMITH, of Hodgensville, upon

PARENCHYMATOUS NEPHRITIS.

A review of the early pathology was made leading up to the present pathologic classification, which is not satisfactory to all. Credit was given Rokitansky for having first classified it as a part of a general condition. The large, smooth, white kidney received the most attention as the typical form of this variety. The symptoms are typical of this form, though they all have a line of symptoms common to all. In the parenchymatous form there is a history of an acute attack; dropsy more common than in chronic form, not confined to any particular tissue but changes capriciously from one locality to another part of the body. Changes in blood common and prominent; face is pale, cutaneous surface white, smooth and glossy; blood more watery, poorer in albumin and red corpuscles; urea, uric acid and white corpuscles relatively increased. Uremic phenomena common, headache, defects of sight and hearing, convulsions and coma. The most logical question is the great absence of convulsions in Bright's disease; 90 per cent. are not so affected; convulsions constitute the exception. The various symptoms met in so-called uremic poisoning is difficult to explain upon hypothesis of poison in blood. Excitant, convulsant or narcotic symptoms rapidly follow each other in same case. That these nervous symptoms are caused by cerebral transudation seems most rational, this causes compression of smaller blood vessels and intense uremia of structures. If effusion in subarachnoid space or over cerebrum, coma ensues; if at base of brain, convulsions. Another significant fact is, the treatment which is most effective is that which relieves edematous effusions. The consideration of treatment is under three heads: 1, prevention of further extension of disease; 2, the relief, if possible, of organic changes; 3, the relief of troublesome symptoms. Under first, ascertain and remove cause if possible; diet, rest and clothing regulated; milk diet important. The second indication has not given so satisfactory results. Some think highly of bichlorid of mercury in doses from 1-36 to $\frac{1}{8}$ grain. Troublesome symptoms, as diarrhea, relieved by dieting, ice by mouth, bismuth, oxalate of cerium and opium; anemia by iron alone or with cod-liver oil; dropsic effusion by digitalis, caffein, scoparius, hydragogues, as calomel and jalap. Patient may be carried off by uncontrollable diarrhea. Venesection must not be forgotten. Diaphoretics have their place.

DR. GEO. E. DAVIS, of Salvisa, read a paper on

CHRONIC INTERSTITIAL NEPHRITIS.

Probably the most fertile source of unsuccessful treatment is erroneous diagnosis. Upon an accurate and timely diagnosis depends the correct management of the case. The symptoms taken singly may not be characteristic, but when taken collectively are of diagnostic importance and pathognomonic import. Symptoms are sonorous noises in ears, vertigo, asphyxia of extremities, itching, nocturnal cramps in legs, increased arterial tension, gradual loss of flesh in some cases, incapacity for mental and physical exertion, insomnia, headache, urine may reveal no abnormality, decreased toxicity and reduced specific gravity. Presence of casts while not general is ominous. First symptoms may be of alimentary tract, dyspnea, harassing cough, palpitation of heart, increased arterial tension, edema, disorders of vision, night sweats, increasing anemia, frequent urination. The microscope is much more generally employed and recognized of more importance as a diagnostic means and rightly so. Albumin is increased by full meal and exercise. The reduced toxicity of the urine, or a diminution of its solid elements, is of greater significance of early renal changes than albumin and casts. An interesting case was reported showing an association of symptoms as stated above. In treatment not much progress has been made. Mercury and iodids exercise favorable influences. Digitalis has no essential effect over kidney structures itself, relieving renal insufficiency by increasing arterial tension and stimulating and toning heart. Best results are secured by giving large doses at long intervals at bedtime; strophanthus must be repeated at short intervals. Water is a safe promoter of renal secretion and is best diuretic. Natural alkalin mineral waters have good effect on digestive disturbance. Tatham water exerts a beneficial influence in many cases. Stimulate function of skin and bowels to aid elimination. Diet is important; milk diet lowers specific gravity but increases albumin excreted. Anemia combated by combination of gold and arsenic; bromid of soda for insomnia.

DR. R. C. MCCHORD of Lebanon read a paper on

AMYLOID KIDNEY.

In this form we have to deal with a degeneration which is always chronic without any acute stage or in any sense local. Its origin is in changes which pervade the whole frame and produce tangible alteration wherever arteries penetrate. It may invade other organs simultaneously. No alteration in size of kidney or their appearance when arteries principally involved; ocular inspection tells little, but iodin test is great aid. The amyloid tissue is colored a deep reddish brown. Late, the kidneys are increased in size. Microscopic examination shows alteration in walls of blood vessels, Malpighian tufts, vasa recta. It never occurs in those in perfect health, and occurs in connection with chronic suppuration and syphilis. Early symptoms are indefinite, but late easily recognized. The train of symptoms follow prolonged suppuration or syphilis. He loses flesh and strength. Dyspeptic symptoms and shortness of breath develop. Urine is increased in quantity, pale, low specific gravity; casts not abundant. Pale waxy complexion. Differential diagnosis not difficult. Prognosis is uncertain. If due to suppurative causes deposits will continue to increase as long as drain continues and no longer. If cause not removable, death follows. Give antisyphilitic treatment, when syphilis is present. If ablumin is present and surgical operation indicated, the albuminuria increases the danger from the operation *per se*, and there is additional danger from the anesthetic. The dangers are usually from exposure and prolonged narcosis.

DR. CARL WEIDNER of Louisville, read a paper on

DIAGNOSIS OF THE DIFFERENT FORMS OF BRIGHT'S DISEASE.

Classification recognized as acute and chronic form. In acute form a nephritis is referred to in which uriniferous tubules with their lining membrane is chiefly involved, and form in which interstitial connective tissue is principal seat, but may have combination of two forms, if localized, a glomerular nephritis. Amyloid or waxy kidney occurs independently of previous kidney disease and simultaneously with the same changes in other tissues or organs. Examination of urine is very important and mostly aids in diagnosing different forms. Changes in urine have characteristics more or less common to all forms, in quantity, general physical character and chemic composition, and presence of certain organized morphologic elements. Acute nephritis, chiefly of diffuse form, quantity is diminished, to few ounces or pint in twenty-four hours, or suppression. With improvement urine increases in quantity, or increased when rapid absorption of dropsical effusion takes place. Specific gravity low in relation to quantity, cloudy, high color, albumin in large amount, urea, uric acid and chlorids diminished. Microscopic examination shows leucocytes, red blood cells either well preserved, discolored or swollen; blood casts, hyalin casts in various stages of degeneration, and renal epithelia. In chronic interstitial nephritis the quantity is increased, resembling diabetes insipidus; low specific gravity;

pale and greenish in color, frequency of urination increased, urine clear, no sediment; acid reaction; urea lessened, albumin in small quantity or absent temporarily; fat seldom present; blood thin, leucocytes and renal epithelium small in number; tube casts few, mostly hyalin and granular. Chronic parenchymatous nephritis the quantity varies. Specific gravity lowered in proportion to quantity, 1010 to 1018; light yellow color, frequent urination; acid reaction; urea lessened; albumin always present in considerable amount; fat present in late stages; blood also; leucocytes in large numbers; tube casts always present in large number of all varieties. In amyloid kidney urine resembles that in interstitial form, increased quantity, light color, clear, small albumin, 1010 to 1018 specific gravity; very long hyalin casts extending frequently through several fields, late they are very long and wide.

Dr. Henry E. Tuley of Louisville read a paper on

NEPHRITIS IN CHILDREN.

Nephritis in childhood may be primary or secondary, the latter due to exanthemata, rheumatism, erysipelas, acute and chronic intestinal diseases, vaccination and pneumonia, the active causative agents being primarily of bacterial origin or result of elimination of toxins. Lesions may be descending nephritis, the essential change being glomerular and epithelial, or ascending due to invasion from urinary organs below. Councilman describes changes as simple degeneration of glomerular epithelium with or without exfoliation, or it may be a glomerulo-capsular nephritis, lesion may be of croupous pneumonia type. Emphasis was made upon importance of frequent examination of urine of infants too often neglected. Catheterization resorted to if necessary. Cold and exposure, long bathing in sea water or fresh, may be cause of primary. Symptoms may be misleading, may be trivial, the younger the patient the more the symptoms may point to brain, lungs, or gastro-intestinal tract. Onset sudden, temperature high; pulse rapid, high tension; early edema; blindness, retinitis; scanty urine, high colored; albumin, microscopic examination showing renal derivatives; anemia; cough; waxy, dry skin; pain in back, headache, restlessness, insomnia, strabismus. Relieve kidneys of extra work of carrying transuded serum; restore kidney to normal condition, endeavor to prevent further damage to diseased organ. Calomel and salines; hot-air bath; acetate of ammonia; venesection; pilocarpin, which is very uncertain in its action; water ad libitum by mouth and large enemata. Diuretin is recommended by some.

DISCUSSION ON BRIGHT'S DISEASE.

Dr. Jno. G. Cecil, Louisville—The five papers have covered the ground most elaborately and completely. The pathologist is disposed to subdivide too much. The simple division of acute and chronic parenchymatous and chronic interstitial is all that is necessary for the clinician. The parenchymatous forms are clear in outline, but it is the interstitial form which is of the greatest importance. All life insurance companies magnify the importance of chronic interstitial nephritis, placing it hardly secondary to tuberculosis of the lung. It is insidious and affects the most important citizens of a community, following a life of dissipation it is true, but it is too often found in others who dissipate in work, especially brain work, and unfortunately we find it out too late. This variety creeps on us before we are aware of it. We all know the close relationship between the arterial system and the form of nephritis. All authorities are agreed that arterio-sclerosis is almost invariably associated with it and the great question is: Which goes first, the nephritis or the arterial change? In many instances arterio-sclerosis precedes chronic interstitial nephritis and if we can demonstrate the fact that a man has arterio-sclerosis, we can warn this man of impending trouble. "A man is as old as his arteries." A train of symptoms as headache, nausea, vomiting and diarrhea leads to an ophthalmoscopic examination and the diagnosis can be made early. It is an obscure disease and we can not depend on the symptoms. Anything which will suggest chronic interstitial nephritis should be seriously considered.

Dr. Wm. Cheatham, of Louisville—The ophthalmoscope in many instances has revealed a nephritis never before suspected. In large majority of cases of neuro-retinitis albuminurica seen by the speaker in the last twenty-three years, nephritis was not suspected. Usually glasses are recommended on account of failing vision, though the latter may not be present. Typical cases of papillo-retinitis nephritica may be found with perfect vision. The ophthalmoscope is important in diagnosis and prognosis. It indicates advance or recession of the trouble; a large majority of nephritis in which retina and optic papilla are involved do not live for more than six months or one year. Anatomic lesions in arteries, veins and capillaries are hyalin thickening and sclerosis, thrombosis and occlusion, said to be due to transuding white blood corpuscles, which degenerate; numerous dilatations of capillaries with small aneurysms, liable to occur in all parts of the circulation of the eye, but more often in the retina; hyperplasia of connective tissue often found; if blood vessels extend into inter-granular layers we have hemorrhages; edema of retina with cavities filled with coagulated fluid; granular and fatty degeneration of Muller's supporting fibers; white patches of fatty degeneration: rods and cones may remain normal or become edematous; pigment may remain normal, be absorbed or become swollen; amyloid granules are found in the chiasm and optic tract. Sclerosis of the vessels causes all these changes, more often in retina because its arteries are end arteries with little or no collateral supply. Length of life from a few weeks or a few months, to seventeen years: average of life after involvement of retina, one year. Uremic amblyopia in chronic nephritis usually sudden and permanent. There is occasionally recovery with blindness.

Dr. Chas. W. Aitken, Flemmingsburg—Dr. Cecil referred to the insidious onset of the interstitial form and that we are likely to overlook it, and not likely to confound it with other kidney lesions. Dropsy is more marked in parenchymatous form than the others. The limbs are swollen at night, the face in the morning, and inflammation of serous membrane and uremia is more likely to occur than in others. Dyspepsia is common, skin dry and harsh, neuro-retinitis should suggest careful uranalysis. Scant high-colored urine, high specific gravity, albumin, fatty and hyalin casts. Dilatation and probably valvular lesion of heart is so common that it is generally mentioned in conjunction with nephritis on the death return. In treatment support strength, guard against exacerbations and meet various symptoms. Strychnia for the heart, nitro-glycerin for the headache, pilocarpin with morphin for uremic intoxication and the latter for dyspnea.

Interstitial form is insidious; dyspepsia; frequent desire to urinate. Close observation may detect dropsy. Sixty ounces of urine may be passed in twenty-four hours; low specific gravity. Hypertrophy of left ventricles; accentuated second sound over aortic interspace; headache, insomnia, irritable temper, capricious appetite, peculiar breathing and death by coma, convulsions or intercurrent affections. The treatment is nutritious diet, warm milk; warm dry climate; no intemperance; potassium iodid, mercury and iron. In amyloid kidney there is increased flow of urine, previous existing disease as a rule, low specific gravity, little or no albumin, waxy cachexia. Palliative treatment unless one can remove the cause. These are "every day" diseases and must be looked at on the practical side.

Dr. J. B. Marvin, Louisville—I am satisfied that time would be saved if the term Bright's disease was narrowed down to those forms of nephritis described by Bright. The amyloid kidney is not a nephritis or a Bright's disease, but is purely a secondary condition following syphilis, tuberculosis of bones and lungs; and the treatment consists in the prevention. The interstitial nephritis was not considered by Bright. It is the most treacherous and the least amenable to treatment. The acute parenchymatous nephritis tends naturally to rapid recovery or death; the tendency with careful nursing is toward recovery. In chronic parenchymatous nephritis the association of anemia and dropsy makes it difficult to overlook. A point in the treatment which was not emphasized enough, is rest; rest in bed. Nothing reduces the amount of albumin quicker. The climatic treatment is good, these patients should leave our climate here with its sudden changes and go to Southern Georgia or Texas, where it is not too high, but where the temperature is equable and dry. Wool should be worn next the skin continuously. One of the essayists condemns pilocarpin. Do not give it by the mouth, but hypodermatically. The symptoms of depression are always combatted by atropia. As to the cause of convulsions by potash salts retained in the blood, why not substitute the soda salts? Don't use digitalis as a diuretic; it is not nearly so good as generally thought. In regard to the interstitial variety and the low tension pulse spoken of by one of the essayists, I disagree with the essayist on this point and regard this as a dangerous symptom. Cases are seen with a hard, high tension pulse years before interstitial nephritis is recognized, and it would be better if we possessed more of the expertness of our forefathers in the feel of the pulse and we would more often be on the track of an interstitial nephritis. Urine, pale in color, of low specific gravity, hard pulse, hypertrophy of left ventricle with abscence of valvular lesion, is a strong suspicion of interstitial nephritis. A high tension pulse, associated by bronchitis, asthma, is a suspicion developing in a middle-aged man. Diet, climate and clothing are the best remedies. Three beneficial agents in high tension pulse, are potassium iodid in moderate dose, diluted;

chloral hydrate, not by mouth but by rectum in milk; it reduces temperature also; nitro-glycerin and nitrate of amyl; the former is best, after the first dose tolerance being readily attained. Morphia may kill. There are two separate forms of uremia: Coma and convulsions, the latter with high tension pulse; but with low tension pulse the tendency is to coma and here use morphia sparingly.

DR. W. C. DUGAN, Louisville—It is important to examine urine in surgical cases. I have seen several cases in which death resulted from neglect of this. If an operation must be done to save life, as appendicitis with abscess, you must tell the friends that there may be suppression. Local anesthesia should be used more frequently. I rise simply to urge examtion of urine in all cases.

AP MORGAN VANCE, Louisville—Surgeons generally understand that amyloid kidney can be cured if the suppurating organ or bone is operated upon. I would like to ask if this operation is done thoroughly will the kidney degeneration disappear.

DR. LOUIS FRANK, Louisville—Frequent examinations of urine may not find albumin, and these cases go on and die after major operations, whether ether or chloroform has been given. In regard to the case reported by Dr. Tuley, it hardly seems possible that one ounce of blood drawn could have caused so remarkable a result; the improvement must have been due to some other cause.

DR. ARCH. DIXON, Henderson—Less than two months ago a surgeon in Henderson did a vaginal hysterectomy in a patient 45 years old. I asked the question if the urine had been examined before the operation. He said it had and the result was negative. The operation was done nicely but the patient died on the fourth day with suppression of urine. A microscopic examination should have been made of the urine also.

DR. R. C. MCCHORD, Lebanon—Conservative surgery in amyloid kidney is not good surgery. The disease is stopped effectually if the cause is removed. If death follows operation, it is in most cases from exposure during the operation and the prolonged narcosis.

DR. CARL WEIDNER, Louisville—The patients with neuro-retinitis are not recent cases. It arises as a complication and the subjective symptoms, as dyspnea, dyspepsia, up at night to pass urine, edema. Casts and albumin may be present and no retinitis. The amyloid degeneration is not a Bright's disease. It is found in many conditions, in men as a rule. It is impossible to cure it in view of the pathologic condition. There can not possibly be a revival of the cellular function. But cases may improve; for instance, occurring in a long joint trouble, the amyloid change may be local and not extend. Cases of sudden death after operation are obscure. One examination of urine may not show albumin or casts. Sudden suppression of urine and symptoms of uremia may develop. This may be due to a septic condition causing Bright's disease. Local shock of mechanism of kidney may occur, arresting kidney secretion.

DR. W. L. RODMAN, of Louisville, read a paper upon

INJURIES TO THE BRAIN.

This form of injury is of interest on account of fatality, or conditions worse than death in those who recover. In injuries to the brain, rather than its disease, surgery promises most. Good judgment and prompt action are essential to success. The nature of the cranium prevents drainage by other than surgical interference. Concussion is most frequently encountered in surgical practice; the name, however, is unfortunate. There is usually a macroscopic lesion. Any violence which may cause unconsciousness should be looked on as a severe injury. Keep in bed in a dark room for a week. After shock, recumbent position, mild stimulation by opium, cold to head, calomel, bromids, light diet. Compression may be caused by hemorrhage, depressed bone, inflammatory products and tumors, hemorrhage extra- or sub-dural. One of the branches of the middle meningeal generally gives way; perhaps its anterior branch most frequently. It can generally be easily diagnosticated. A large trephine should be used and opening enlarged by mallet and chisel or rongeur forceps. Sub-dural hemorrhage generally accompanies depressed fracture. When dura is opened it should be done by semicircular incision one-fourth inch from bone, so that it can be accurately sutured after hemorrhage has been controlled; unless this is done, fungus or hernia cerebri will likely ensue. Non-chromicized catgut should be the suture material used. If cerebral abscess is large there will be hemiplegia of opposite side. Fractures are dangerous in proportion to accompanying injury to brain and membranes. There is too much thought of fracture, too little of damage to the brain. Dangers are immediate and delayed. We may have fractures of vault or base; the former usually amenable to treatment, while damages to base usually preclude surgery. In punctured fractures make immediate trephining, free removal of bone, opening of dura, complete disinfection and drainage. Delayed operation in compound fracture is thirty times as fatal as those done at times of accident. In simple depressed fractures with symptoms of compression, trephine immediately. Fractures of base may occur in three fossæ. The chief features to be kept in view are drainage and disinfection. If drum membrane has not been ruptured these fractures are compound, communicating with the external air through the Eustachian tube in naso-pnarynx.

DISCUSSION.

DR. ARCH. DIXON, Henderson—One of the most important measures is to prevent sepsis. A few years ago I lost a case of basic fracture, there having developed a suppurative middle ear and infection from that. If there is a discharge from the ear or nose these canals must be rendered aseptic. The brain and cavity must be rendered aseptic and is as important as the peritoneal cavity.

DR. W. C. DUGAN, Louisville—Concussion is a misnomer, and the literature of the brain is to be rewritten. Unconsciousness following a severe blow, injury to the brain itself is found in nine out of ten. In linear fracture the inner table, which is very friable, is more extensively injured than the outer table. I have seen a patient go for a week after a blow; later headache develops; then unconsciousness. And operation was done and patient died. Do these operations early; do not wait for misnamed compression and paralysis. Mortality 40 per cent. in late operations, 1 per cent. in early operations. Epileptic habit is bad name; it is due to interstitial changes in brain, hence no relief from the operation. The mallet and chisel are to be preferred to the trephine. Hold the chisel at angle of 10 or 15 degrees to prevent the concussion caused by direct blow. Simple fractures which are inaccessible should be trephined. More frequent operation in basal fractures if able to locate place of fracture.

DR. AP MORGAN VANCE, Louisville—I wish only to sound a warning against opium in head injuries; it may mask coming symptoms.

DR. R. C. MCCHORD, Lebanon—There is uncertainty in determining whether fractures of the skull exist if soft parts are not cut; no one can say positively without cutting down and examining.

DR. W. L. RODMAN, Louisville—The mallet and chisel at times are to be preferred. In all cases of fracture I shave the entire scalp, no matter how beautiful the hair. In fracture of base I am in favor of complete drainage and disinfection, which can not be obtained without operation.

DR. DUDLEY S. REYNOLDS here followed with a paper upon "A Term of Clinical Service."

(To be continued.)

Diminution in the Natality of the French Nation.—Dr. D. G. Brinton contributes to *Science*, May 8, the following paragraph on the subject of the above caption:

"This subject occupied a prominent place in the discussion of the anthropologic section of the French Association for the Advancement of Science at its last meeting. More than elsewhere, it deserves attention from the scientists of that nation, for out of the 86 departments into which France is divided, in 51 the deaths exceed the births. The annual natality for the whole country is only 23.7 for each 1,000 inhabitants, and this number includes the stillborn! To remedy this progressive depopulation, its causes must be ascertained. Dr. E. Maurel brought forward an interesting theory. He pointed out that the birth rate is lowest in those departments where food is most abundant and cheapest. The relation between these two facts he held to be the prevalence of hereditary arthritic diathesis (uric acid diathesis), leading to diminution of reproductive vigor in both sexes, this diathesis arising from excessive alimentation. Another speaker, Dr. Pommerol, attributed the diminished natality to voluntary restriction, while others suggested the increase of religious celibacy, the laws relating to the division of property, the lateness of marriages, and the decreased reproductiveness of women."

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Original communications are only received with the understanding that they are exclusively contributed to this JOURNAL.

INFORMATION WANTED.

It would greatly facilitate the prompt delivery of the JOURNAL to those members of the ASSOCIATION living in large cities, if they would kindly furnish this office with their street address in those cases where it is omitted from the wrapper of their JOURNAL, as we have been notified by the postmasters of the larger cities that second-class mail matter not having street address, would be placed in the general delivery to await call.

SATURDAY, JUNE 20, 1896.

THE ABUSE OF THE BROMIDS.

At the recent meeting of the Asssociation of American Physicians, one of the papers that attracted most attention was that of DR. S. WEIR MITCHELL on the untoward effects of bromids in certain cases. He showed that the popular usage of these drugs is liable to lead to abuse, and that cases are not infrequent in which serious or even fatal bromid intoxication has occurred. The almost universal use of the bromids makes these effects the more important, as they are sometimes unrecognized by the physician, and still more often by the laity, who have learned to indulge in self-medication with these supposedly innocuous agents. While these facts have not been generally unknown to the profession, it is well to have attention called to them by an authority whose name will insure to any of his utterances a respectful consideration.

One point especially noted by DR. MITCHELL was the danger in certain cases of epilepsy of exciting a maniacal irritability that might sometimes amount to dangerous homicidal insanity by the use of the bromids. This is a possibility that is perhaps better known from experience by asylum physicians than by those in general or special practice outside of these institutions, but it is a little surprising that DR. MITCHELL should have been, as he declares himself, utterly skeptical as to its occurrence as late as ten years ago. At that time it had been many years a matter of medical record, and had been discussed at length at the meeting of the American Neurological Association in 1881, when it seemed to have been quite generally observed. With very large doses of the bromids irritability and maniacal conditions are easily produced in certain insane epileptics, and it is quite possible, as DR. J. S. JEWELL then suggested, that some epileptics find their way to asylums through this idiosyncrasy.

The liability to mania or to excessive irritability is not the only individual peculiarity as regards susceptibility to the bromids. Within a short time an inquest was held on a man who died suddenly in London who had been taking the bromids very freely for neuralgia without exhibiting the usual symptoms of bromism, and a verdict rendered of death from heart weakness due to the medication. Whether the diagnosis was correct or not in this instance, it is certainly within the bounds of possibility, judging from the general depressing action of the bromids, that there may be individuals with idiosyncrasies that make these effects excessive and dangerous. The rarity of such peculiarities makes them only the more perilous when they do occur.

The bromids in moderate doses judiciously used rarely produce any serious effects in the hands of experienced and careful practitioners, and even in cases of exceptionally pronounced anti-bromid idiosyncrasies they can generally be discontinued before actual harm has been accomplished. The same can not be said when they are given in large doses, and more than one dram per diem may be considered large in many cases of epilepsy or when self-administered by the laity. Undoubtedly damage has been done by the popular usage of such preparations as bromo-soda, bromo-seltzer, etc., as was suggested in the discussion of DR. MITCHELL'S paper. That they are also employed too frequently and inconsiderately by the profession is also probably true, and therefore his communication is a timely one. It is one of the utilities of a great reputation that it can give weight to utterances of what ought to be generally recognized truths, but which are likely from that very fact to be too often practically ignored.

HARDLY THE CODE.

One of our exchanges appears especially acrimonious regarding the late meeting of the AMERICAN MEDICAL ASSOCIATION at Atlanta, to the extent even of regret for absences from that most enjoyable "barbecue" with its juicy accompaniments. But speaking in the plural even though our calcitrant brethern were present we opine their enjoyments would not have been cut short by the brutal code, which "has brought death into our world and all our woe." There seems to have been a mock levity about the whole affair; sensoriums were in part not in a proper condition, for

which we are truly thankful, as a cause for the lack of bigotry which was in evidence since "old-coders and no-coders and new-coders, mingled freely together." Indeed, there was no action on the code question, which is very significant.

Again we join hands with our critics in the onslaught upon the supposed originals of likenesses in the lay papers, which seem to have been cartoons, without "criminal ears." For the last mitigation we are truly thankful. From a business standpoint we think that advertising should be restricted to certain classes; it would then be much cheaper and there would be fewer disappointments and a clear saving of at least seventy per cent. of our professional earnings. Still there is a hankering after ante-mortem fame which is rather hard to curb, else why should we run the risk of bulletins regarding the health of distinguished patients, the technical details of reporters and the steps of grand operations.

We think that the general profession has always been content with modest earnings and commendable acts of charity—that it gets but scant thanks for its good will toward men and more especially for its fealty toward the code, which thus far has condoned the faults of even vain-glorious leaders. At all events as some complaints have been made that the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has "a monopoly of the papers and the discussions," we can but reply "why not, if it is to publish the entire proceedings?" The ASSOCIATION pays its own reporters it is true, but the doors are open. The ASSOCIATION owns its JOURNAL and it means to make it a successful one. Trade journals and medical publishers' journals have no claims superior to those of the ASSOCIATION itself, but they may send reporters if they wish.

Now to our critics we can only say that as regards the Code it is not we who are continually opening the gates of glory, or on the contrary that we are striving after the notoriety of detectives. Fortunately many of the evils of which we have spoken redress themselves and the public also, to whom so many supplications have been made, have begun to discriminate in favor of him who does not need to advertise. We can but conclude that it is hardly the Code, which is at the bottom of the "hard times" but over-production and over-inducement. As a profession, at least those who are stranded in it have only the redress of restricted immigration since with all the minute divisions into specialties and the fads of multi-millionaires, we can not expect much gratitude and still less recognition. The no-coders say in effect: "It is the public's right and the world owes every man a living; so let none of us withdraw our small talents from the field, but incontinently convert our profession into a trade. We may then peddle our wares from door to door, and perhaps earn a mansion—in the skies."

COST OF IMPURE WATER.

In his "Notes and Comments" on the May report DR. FRANK REILLY, Assistant Health Commissioner of Chicago, says that if a human life is worth $5,000, as the Legislature of the State of Illinois has decreed, then it is an easy matter to demonstrate beyond any peradventure that the city of Chicago is losing at the rate of more than $3,000,000 a year through a polluted water supply. His diagrams furnished with the March, April and May monthly reports show, in graphic manner, the sanitary quality of the water and the average daily deaths from the diseases directly affected thereby for a period of twenty-four weeks—from the week ended December 21, 1895 to the week ended May 30, 1896, inclusive. Examination of these diagrams discloses three continuous periods of several weeks each, to-wit, first, from December 21 to January 25—six weeks; second, from February 22 to April 2—seven weeks; third, from April 11 to May 30—eight weeks. During these periods the deaths from the acute intestinal diseases—also shown on the diagrams—were 206, 137 and 258, respectively.

The water supply was "suspicious" or "bad" during the first and third periods, with an aggregate of 464 deaths, or a daily average for the fourteen weeks of 4.7. The water was "usable" or "good" during the intermediate period of seven weeks with an aggregate of 137 deaths, or a daily average of 2.8. The higher death rate of the first and third periods can be attributed to no other cause than polluted water.

Applying to the entire year the figures of the twenty-four weeks covered by the diagrams—probably a sufficiently long period to generalize from—there would be, with a good sanitary quality of water, 365 days×2.8 deaths=1022 total deaths; with a bad sanitary quality of water, 365 days×4.7 deaths=1715 total deaths. Excess of deaths due to polluted water 693, at $5,000 each=$3,465,000. This sum represents the interest at 5 per cent. on a capital of nearly $70,000,000.

"How much of this amount," DR. REILLY asks, "would complete the drainage channel, build intercepting sewers and insure a pure water supply the year around?"

In view of the demonstrated success of water filtration and the progress made in its adoption as set forth in these columns from time to time, the JOURNAL is moved to ask, how much of this amount would be required to establish a filtration system for Chicago which, while furnishing a wholesome water supply for that city, would not transfer its disease and death producing sewage nuisance to its helpless neighbors.

KENTUCKY STATE MEDICAL SOCIETY.

The forty-first annual meeting of this Society was held on June 10, 11 and 12 and was one of the most successful in its history. The meeting was most ably presided over by JOHN A. LEWIS of Georgetown and

the members were most hospitably entertained through the much appreciated efforts of the able chairman of the Committee of Arrangements, DR. R. C. MCCHORD, mostly by the residents of the town.

The features of the meeting were the symposium of papers upon subjects chosen by the program committee, upon Bright's disease, vaginal versus abdominal hysterectomy, and fractures. The papers treating of these subjects were interesting and up to date, while the discussion was able and instructive.

The Society puts itself upon record as being opposed to the prevailing practice of criminal abortion and memoralized the State Legislature to pass a statute which will make it possible to punish offenders as there is none now on the statute books which will convict, if the evidence is sufficient. It also, on motion of DR. HENRY E. TULEY, endorsed the resolutions adopted by the AMERICAN MEDICAL ASSOCIATION against the passage of the bill by Congress prohibiting vivisection in the District of Columbia, and requested the representatives in Congress and Senate to use every endeavor to secure its defeat.

On the last day a resolution was passed protesting against the reduction of the fees for Life Insurance examination, and it was learned that Marion County had formed a league among the local physicians and they refused to make an examination for any company for less than five dollars, and it was the sense of the Society that this could be done in all cities as well as the smaller towns.

The committee appointed at the last meeting to "Collect and Codify the Existing Constitution and By-Laws" reported with a new constitution under the belief that it had been appointed to "Revise" the existing constitution. The president ruled that the report was a revision of the constitution and would have to lay over one year before it could be acted upon. The next day it was decided upon motion to "reconsider the motion to delay the discussion of the committee report for one year." This was done and all of the report was adopted except that portion relating to the method of electing officers, which was made to lie over until the next meeting. The Society is still acting under the old constitution, as the author of the motion to "reconsider the vote" was really asking for a reconsideration of the President's ruling which should have been in the nature of an appeal from his decision.

The genial and popular chairman of the Committee of Arrangements, DR. R. C. MCCHORD of Lebanon, was the choice of the Nominating Committee for President, and Owensboro was chosen the next place of meeting.

There is hardly any doubt but there will be a change in the method of the election of officers from the present one, the Nominating Committee being chosen by the representatives from the various Congressional Districts. The new constitution proposes to place the selection of this committee in the hands of the Executive Committee composed of the officers of the Society, but there will be a strong fight made to have the election take place in open meeting as there is so much opportunity under the present and suggested régime for political work and "log rolling."

PAN-AMERICAN MEDICAL CONGRESS.

Gentlemen intending to take part in the meeting of the Second Pan-American Medical Congress to be held in the City of Mexico, residing in Chicago and the Northwest are requested to send their names immediately to the Editor of the JOURNAL of the AMERICAN MEDICAL ASSOCIATION, 61 Market St., Chicago, for transmission to the Mexican Headquarters.

THE BALLOTING.

Several gentlemen have asked if they would be allowed to change their votes before formal announcement. To that we have to say that any member so desiring, should send another ballot properly filled out, marked "*changed*" and properly dated, when, at the counting his original ballot can be found, it will be returned to him.

CORRESPONDENCE.

Proposed Testimonial to Dr. Davis.

ROCKFORD, ILL., June 3, 1896.

To the Editor:—In view of the coming meeting at Philadelphia, which is to celebrate the semi-centennial of the organization of the ASSOCIATION, though still appearing remote, it occurs to me to be none too early now to suggest that an honor, long deferred, though well deserved, be in some commendable way presented through the ASSOCIATION to the medical world, by which our venerable teacher, mentor and friend, Dr. N. S. Davis, the man whose keen and fertile brain, whose prescience ever on the alert for the good of medicine and humanity, originated the plan of the AMERICAN MEDICAL ASSOCIATION, and as constantly and unwaveringly stood by it until its maturity has been attained and all the medical profession of the United States, if not of the civilized world, are ready to rise up and do him homage. Not only has he done this but, with a persistence and courage equally to be commended, he has advanced the standard of medical education, when the espousal meant loss of money and threatened non-affiliation. He lent dignity to the Ninth International Medical Congress, and presided with such evidences of learning and grace as made every American physician proud to own him. Now, when his fifty years of unusually active medical life are rounded out, I believe if the attention of the members of the AMERICAN MEDICAL ASSOCIATION be properly called to it, there can be some tangible recognition of such service given that will be a source of never-failing pleasure to him in his beautifully declining years. Let this be done while his great mind, inured to early toil and serious thought, may be mellowed with a loving and thoughtful deed that will make his pathway strewn with some of the kindlier actions of his admiring brethren in the medical fraternity. No towering shaft or non-corroding bronze can take the place of a loving testimonial tendered him now. He should have been presented with a

general's badge or epaulet with the red cross, after the Ninth International Medical Congress, as well as some recognition of your own untiring service as Secretary General.[1]

I think if you will suggest this thought in some suitable way it will not be too early to call attention to it now, and you will be surprised what a universally responsive chord it will strike in the hearts of the profession. Yours, D. L.

Reuben D. Mussey.

NEW CASTLE, COLO, June 8, 1896.

To the Editor:—During my first course of lectures at the Ohio Medical College, 1848-9, R. D. Mussey was Professor of Surgery. He was always kind to his students and patients, though sometimes decidedly brusque with those who had by improprieties brought themselves to grief. As an illustration, a man was placed on the table at the Commercial Hospital with a bubo in either groin. The Professor said: "Young gentlemen, we open these abscesses with a number of small punctures," suiting his action to the word. The patient's hand went involuntarily to the wound with the cry of "Oh God! oh God!" The Professor bluntly said: "Turn over, sir; 'the way of the transgressor is hard; they that sow to the wind must reap the whirlwind.' We open this, you see, in the same way."

Age had made his hand tremulous, and it trembled until the knife touched the desired spot, when it was as steady as in youth.

His lectures were always practical, but extremely terse, never adorned by a single flower.

In the summer of 1849 I went East with Dr. Lyman Beecher, father of Henry Ward, wife and daughter and Dr. Mussey. We crossed Lake Erie on the 4th of July, and at the instance of Dr. Mussey, the passengers invited Dr. Beecher to give us an oration. At Buffalo we parted company with Dr. Mussey, meeting him again at Saratoga and Hanover, N. H., Dr. Beecher and family and myself going to Niagara, Lundy's Lane, and across Ontario to Oswego and so to Saratoga, where we again met Dr. Mussey. Parting company here with these venerable and noble people I went to Caldwell and crossed Lakes George and Champlain to Burlington, and thence by stage via Montpelier to Dartmouth College, where I again met Dr. Mussey and his son, who was a student at Dartmouth. Turning his boy about, he said: "Feel of him; he has never tasted meat."

I suppose all men have their hobbies, and some physicians ride them wildly. Professor Mussey's was diet, well-nigh absolute. After some of his operations he kept the patient for twenty days upon water and three small crackers a day. He was personally very abstemious and for many years a strict vegetarian. He was honest, earnest, a hard student and always a Christian gentleman. In his daily walk and professional life he was a fit exemplar to us all. W. L. SCHENCK, M.D.

The Second Pan-American Medical Congress.

CHICAGO, June 5, 1896.

To the Editor:—To the dignified letter in the May 30 number of the JOURNAL, protesting against the unjust attack on the Mexican people and medical profession, allow me to add my own experiences in support of Dr. Cerna, in the hope that the medical profession in this country may not become prejudiced against our southern neighbors. It would be a pity if any word of hostility to the Mexicans should be the means of reducing the number of those who expect to attend the next Pan-American Medical Congress, because this will undoubtedly be the test meeting, and if it is poorly supported, interest will cease and our relationship with the rest of America will return to the apathy of former years.

I have practiced medicine among the Mexicans on terms of greatest intimacy, meeting all classes and finding all degrees of education. I know that Anglo-Saxons are not Mexicans nor Mexicans Anglo-Saxons, but this is a vital reason why it is unjust to study them from one standpoint only. I grant that the percentage of illiteracy is high and superstition consequently more evident, but I failed to find impenetrable stupidity among them, while I did find that the doctor is held in much higher respect than he is in Texas. Next to the priest comes the doctor, and his patient follows the doctor's directions with a strictness that seldom marks the attitude of the patient in this country. Doctors are not nearly so abundant there, and their journeys are often of enormous distances; yet I never found anything but courtesy and hospitality in making my visits, and I was never refused payment for my labor, although my fees were sometimes reduced at the pleadings of the patient.

The National School of Medicine, a part of the University of the City of Mexico, grants degrees entitling the holder to practice throughout the Republic, while a few local schools like that at Monterey can grant this right within the one state only. The result is that the graduate of the National School is a well-posted man, fit to be admitted, as equal, to any medical association in the world; but while the graduate of the local school may be uninstructed in the technique of some of our modern methods, he is always an educated man, able to write his own language and his prescriptions correctly, and fitted to take an honorable place in the society to which his ambition calls him. The Mexican doctor is never ignorant; he may sometimes fail to practice the principles of antisepsis and asepsis, and he may often purge and puke rather briskly in fevers and inflammations, but not every surgeon outside of Mexico avails himself of the principles of his art, nor does every physician in our country abstain from the use of calomel when his diagnosis is doubtful. Above all this, the Mexican physician preserves his dignity, and respects himself and his profession, so that his influence in the community is far greater than is ours at home.

I need say nothing of the morals of the Mexican people. I found them about the same as one finds morals in England, Germany or Spain. But the resident of San Antonio or Chicago had better purify his own social atmosphere before condemning that of his neighbor.

I have purposely generalized my note, but did not space prevent, I could give many an illustration of the courtesy of that people, and of their honor for the man of education, while instances of the very traits criticized in the Mexicans can be found within our borders.

Any one who attends the meeting in the City of Mexico next November will meet with unbounded hospitality, and will return with such broadened knowledge that he will earnestly desire the perpetuity of the Pan-American Medical Congress.

Very respectfully yours,

ALBERT B. HALE, M.D.

The Colorado Ice Decision Not Final.

BUREAU OF HEALTH, DENVER, COLO., June 10, 1896.

To the Editor:—I have noted with some interest the editorial excerpt published in last week's issue of a recent decision of the Colorado Court of Appeals in regard to the limitations of the power of a health commissioner to condemn ice.

Inasmuch as the opinion as rendered is quite misleading and has deliberately ignored, or in some instances contradicts the record as certified in the lower court, and also because the decision as rendered by the court of appeals is not final, the case being now pending in the supreme court of the State of Colorado, I deem it entirely proper to state certain facts in connection with the case which will at least militate against

[1] A bronze medal was struck, commemorative of this Congress and its chief officers, in 1887.

the acceptance of the decision as rendered as either good law or as justice.

The record as certified showed that the order prohibiting the sale of impure ice was based upon:

1. Repeated analyses of the ice by the bacteriologist of the Denver Health Department and its condemnation by him. Each cubic centimeter was found to produce an everage of 40,000 colonies upon the gelatin plates.

2. Repeated analyses of the water of the lake from which the ice was obtained.

3. Sanitary inspection of the lake and demonstration that it was fed by an irrigating ditch which flowed through many manure-covered fields and that it also received direct contamination from sewage. (This may not have been so distinctly brought out in the record as submitted, but the evidence in the lower court was overwhelming.)

4. Conviction in the police magistrate's court after a prolonged hearing covering several days, in which all these points were brought out.

5. Subsequent convictions in the police magistrate's court in at least seven cases where sale of the same contaminated ice for human consumption was proven and the fact of its actual use for human consumption shown beyond possibility of contradiction.

In addition there was pending in the county court at the time the record of proceedings was certified, an appeal, which was prosecuted to a final determination before a jury, resulting in a conviction of the defendant for selling impure ice. Upon this conviction he was fined.

Further, a district court judge, while holding that the sale of such impure ice for storage purposes might not be interfered with, had already issued an injunction restraining the defendant company (the Corbin Ice Company) from selling their ice for human consumption or for use in any place where it might come in contact with human food.

The decision of the court of appeals, ignoring these plain facts which were of record, was received with considerable surprise by the citizens of Denver, especially inasmuch as the defendant company had, through one of its own attorneys, tacitly admitted that their ice was not of a character suitable for human use, and that in selling it as "pure lake ice" they had been doing wrong.

While I do not intend to overstep those bounds which precedent has established as constituting the proper respect to be shown by all citizens for the decisions of the judiciary, I am fain to say that the comment of the decision upon the health commissioner was distinctly improper. The interests of the public are apt to be better safeguarded by the decisions of competent sanitarians, formulated after many months of painstaking investigation and only enforced by the lower courts (as in the present instance) after an impartial consideration of evidence, than by the haphazard decision of any lawyer whom the fortunes of politics or the result of political barters have placed in positions of honor.

As sanitarians work for actual results, it may be of interest to add that no ice from the lake in dispute is being sold in Denver this year for human consumption, nor so long as the responsibility of the enforcement of our present law depends upon me will such sale be permitted. Very respectfully,

WILLIAM P. MUNN, M.D., Health Commissioner.

A Nameless Secret Remedy.

CHICAGO, June 12, 1896.

To the Editor:—In the June 6, 1896, number of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION, the agent of an Iowa secret remedy for diphtheria states that Dr. Matter and the consulting physician had pronounced a patient suffering from pneumonia beyond recovery, and that the life of this patient had been saved by the nostrum which he advertises.

As I was the consultant in question, I wish to state that neither Dr. Matter nor myself had pronounced the patient beyond recovery, but merely pointed out the doubtfulness of the prognosis in view of the advanced age of the patient and of the severity of the infection. This is a precaution which no responsible physician will ever omit, and requires no justification. The patient's recovery was such as we see constantly in practice, in illustration of the ability of the human organism to recover from serious illness.

As this bactericide scheme is, in my opinion, a mercenary enterprise under the cloak of philanthropy, it seems unwise to advertise the nostrum even by denouncing it. It would therefare not occur to me to waste any time over it, if physicians graduated from reputable colleges did not stoop to air their "cures" in the newspapers. They give the name, disease and address of their patients, and in most of their reports display such an awkwardness and illiteracy as should make our profession blush both for their effrontery and boorishness.

The agent in question, whom this wily Iowa physician evidently uses as a shield, is waging a warfare against the diphtheria antitoxin, which he is attempting to degrade into a competitive remedy. His method forces the analogy upon me of a drunken man spitting upon a Raphael Madonna. What I therefore wish to protest against is not the character and method of pushing a secret medicine, which is necessarily always dishonest, but the stupidity and recklessness of regular physicians in championing it. Respectfully,

EDWIN J. KUH, M.D.

Notes on O——a, and the B—— C——, with a Few Words on Quackery in General.

CHICAGO, June 15, 1896.

To the Editor:—In my letter of May 2, on Omnicura and the Bracelin cure, I refrained from taking much space in the JOURNAL, because the smallness of the subjects did not warrant it. But in the number of June 6 I find J. J. Russell spreading himself over four columns, ostensibly to answer my criticisms. And there I find that the omnicura has now become a waif and an orphan, disowned and rejected by the very one into whose lap she has poured her golden treasures.

But strange as this may seem, it was his only means for smuggling his letter into print, and use mine as a pretext for sponging a free advertisement out of the JOURNAL. In this he has succeeded as usual and it was necessary that he should. Experience shows that it is difficult to land a shark without giving him plenty of rope and space to flop around in; especially if he is an old one. The same applies to the fresh-water species. These are apt to hold the bait between their teeth, and sulk for three or four weeks at a time, before they start on a run. When they feel the hook they begin to snap with great fury, but being cowardly they can never frighten an honest fisherman. Although worthless when caught, they can be made to furnish excellent sport when properly handled, and before they turn over they invariably try to prove an alibi.

This is just what J. J. Russell, president of the Omnicura Co., and manager of the Bracelin cure has been trying to do by "emphatically stating that there is no more relation or connection between these two, than there is between the Klebs-Loeffler bacillus and the Ferris wheel," wanting to be understood that he is in no wise connected with the omnicura.

The following will prove the value of his statements:

SPRINGFIELD, ILL., June 10, 1896.

MARTIN MATTER, M.D., 3137 Wabash Ave., Chicago.

Dear Sir:—Replying to your letter of June 8. The "Omnicura Remedy Company" was incorporated April 9, 1895, with a capital stock of $20,000, and the following object: "To manufacture, use and sell 'Omnicura' a new medical discovery." The incorporators were: James J. Russell, Robert E. Buchanan and Hart. J. Fitzgerald. Yours very truly,

W. H. HINRICHSEN, Secretary of State.

This sample of J. J. truthfulness is not so alarming: but to even gressly slander the Ferris wheel without any use or provocation whatever, shows a very mean disposition.

The letter of thanks which he states the Eppstein family wrote to him, is another myth. He wrote it himself and became so obtrusive to the family that they finally signed it to get rid of him. Any one doubting this may address B. Eppstein, 3144 Wabash Avenue.

No one who is acquainted with the Omnicura will find it strange that J. J. Russell does not want to be connected with this "new medical discovery." Imagine a string or piece of tape, joined at the ends and hanging loosely about the neck, with a number of little plasters attached to it, which are claimed to possess the miraculous power of drawing every known disease out of the system; curing Bright's disease, consumption and every ailment imaginable; this is the Omnicura. The price is $10 and is based on profound psychologic reasoning. It is well known that a man who is swindled out of a quarter is apt to talk apout it; but when the amount is $10 nothing but silence can keep him from ridicule.

This is the individual whom any physician in this city may meet some day at the bedside of a patient, telling the latter how badly he looks and how hopeless his case is without the Bracelin cure. In one case antitoxin has been used an hour or two before his intrusion—and his nostrum has cured diphtheria when antitoxin had failed. In another a patient is gradually recovering from pneumonia or some other illness—and he was cured by Russell after his physicians had given given him up.

Formerly a politician in Iowa, he now uses even physicians as willing or unwilling tools to advertise his nostrum: a fact which must bring a blush of shame to the face of every honest medical man. With overwhelming effrontery he has even brought a mandamus suit against Dr. Reilly, Chief of the Board of Health, because he was refused access to the daily reports of contagious diseases. When a physician resents his impudence he is made an example of in the *Tribune*, by being exposed to public ridicule. The name of Dr. Edwin Kuh, a man of the highest professional standing, is held up to every reader of Russell's pamphlet on the Bracelin cure, as a warning to others who might have the temerity to question its claims, in a letter refitted with new spelling, the main argument being, that Kuh means cow in English.

Quackery will exist as long as there are dupes among mankind, but it must be kept out of contact with legitimate medicine. The quack or his agent is as much out of place in a physician's office or at the bedside of his patients, as a prostitute in the home of a virtuous woman. Our legislation has made enough concessions to mountebanks, without physicians adding thereto. Legalized quackery as such is a well paying business and needs no encouragement from medical men.

MARTIN MATTER, M.D.

The Wisconsin Diploma Mill.

OFFICE OF ATTORNEY GENERAL,
MADISON, WIS., June 13, 1896.

To the Editor:—Your JOURNAL of April 25 was forwarded to me by one of the good physicians of this State and furnished valuable information to this office for the purpose of bringing an action to dissolve the Wisconsin Eclectic Medical College at Milwaukee.

We have just prepared a complaint and I take great pleasure in forwarding a copy to you. You are at liberty to use it as you see fit. You will notice that I have obtained leave from the Supreme Court of this State to bring an action to annul its charter. This action will be brought in Milwaukee county. I have to-day mailed the papers to the sheriff of that county requesting his service.

Yours truly,
W. H. MYLREA, Attorney General.

STATE OF WISCONSIN,
CIRCUIT COURT FOR MILWAUKEE COUNTY.

State of Wisconsin ex re W. H. Mylrea, Attorney General, Plaintiff, vs. Wisconsin Eclectic Medical College, at Milwaukee, Defendant.

The State of Wisconsin, upon the relation of its attorney general, respectfully informs the Court:

That the defendant, the Wisconsin Eclectic Medical College at Milwaukee, is a corporation formally organized and colorably existing under the statutes of this State, and that it was organized for the nominal purpose of teaching students the science of medicine and preparing and educating them to practice as physicians, and conferring upon them, upon having been examined, and they having succeeded in passing such examinations as to their knowledge of said science, the degree of Doctor of Medicine, or such other degree which might be proper, according to their knowledge exhibited on such examination.

That the date of its supposed organization was on or about the 31st day of December, A.D. 1895, and in the preliminary papers preparatory to organization its principal office and place of business is stated to be in the city of Milwaukee and county of Milwaukee aforesaid.

That heretofore, on the 27th day of May, A.D. 1896, upon the application of W. H. Mylrea, attorney general for the State of Wisconsin, it was by the consideration and judgment of the Supreme Court of said State of Wisconsin ordered that leave and permission be and they were then granted by said Court to said attorney general to commence an action in the Circuit Court of Milwaukee County and State of Wisconsin, upon his relation, against the corporation known as the Wisconsin Eclectic Medical College, to vacate its charter and annul its existence as a corporation, together with such other and further relief as to the Court may seem just and equitable.

And thereupon the State of Wisconsin, by its said attorney general, complaining, shows to the court and alleges:

That on the 23d day of December, 1895, Fred Rutland, Ann Neve Rutland and H. Meyer associated together for the purpose of forming a corporation the object and business of which was stated in the articles of association to be as follows:

1. "For the purpose of teaching students the science of medicine and preparing and educating them to practice as physicians and conferring upon them, upon having been examined, and they having succeeded in passing such examination as to their knowledge of such science, the degree of Doctor of Medicine, or such other degree which may be proper, according to their knowledge exhibited on such examination.

2. "The name of such corporation shall be the 'Wisconsin Eclectic Medical College at Milwaukee,' and its location is in the City of Milwaukee, County of Milwaukee and State of Wisconsin.

3. "This corporation is formed without capital stock.

4. "The general officers of this corporation shall consist of a president, a treasurer and a secretary, the office of secretary and treasurer may be held by one person.

5. "The Board of Directors shall consist of three persons who shall hold their office for five years and shall be elected by the members of the corporation; the Directors shall have the general charge, control and management of the corporation, its affairs and property. The President shall preside at all meetings of the Board of Directors and of the members of the corporation; the Secretary shall preserve the seal, archives and evidence of the corporation and attend to all business incidental thereto. The Treasurer shall receive and disburse funds of the corporation and shall keep the accounts of the corporation and books belonging to it. Any of these officers may act for the other officer in the absence of the same, and the office of secretary and treasurer may be filled by one person.

6. "Every person of good moral character having a diploma entitling him to practice as a physician may become a member of this corporation by a majority of the vote of the members of this corporation.

7. "Regular meetings of the members of this corporation for the election of directors and for the transaction of other business shall be held annually on the first Tuesday after the first day of January of every year.

8. "The signers of these articles are at the time of the signing thereof the only members of the corporation, and the first meeting of the members thereof for the purpose required by law shall be held at Room 7 of Lipp's Block, City of Milwaukee and County of Milwaukee, on the 27th day of December, 1895, at 3 o'clock in the afternoon."

Said articles were signed by Fred Rutland, Ann Neve Rutland and H. Meyer, on the said 23d day of December, 1895, recorded in the office of the Register of Deeds for Milwaukee County, and on the 31st day of December, 1895, duly filed in the office of the Secretary of State of said State of Wisconsin.

Complainant further complaining denies that he has any knowledge or information sufficient to form a belief as to whether or not a Board of Directors for said corporation has ever been elected or as to whether or not the person "H. Meyer," one of the alleged signers of said articles of incorporation, has any existence in fact.

Complainant alleges upon information and belief that no record has been kept of the meetings of the Board of Directors of said corporation, if it has a Board of Directors, and that no by-laws have been adopted by said corporation, and that no record of any of the acts or doings of said corporation has been kept or preserved in any manner. That said corporation pretends to be carrying on the business of a medical college at 1809 Fond du Lac Avenue, in the City of Milwaukee, Wisconsin, in certain rooms above a store building located at that place, which rooms are adapted for residence purposes only and are utterly unfit for the purpose of the business of carrying on a medical college. That said corporation has no apparatus or paraphernalia of any kind suitable for the carrying on of a medical college, or for the giving of instruction therein. That it has no medical library of any kind suitable for the use of teachers or students. That it employs no teachers to give instruction to persons desiring to obtain a medical education. That it has never exercised the rights and privileges intended to be conferred upon it by its articles of organization, and does not intend to exercise any of the rights and privileges so intended to be conferred upon it.

Complainant further alleges upon information and belief that said Fred Rutland, Ann Neve Rutland, the wife of said Fred Rutland, and said H. Meyer, if there be a person by that name, did not organize said corporation in good faith for any of the purposes mentioned in its said articles of organization, but fraudulently and unlawfully organized said corporation for the sole purpose of enabling them to issue to ignorant and unskilled and wholly incompetent persons, spurious and bogus diplomas purporting to confer upon such persons the pretended authority of practicing medicine and surgery with intent thereby fraudulently to procure from such persons large sums of money in payment therefor.

Complainant further alleges upon information and belief that after said association had thus been formally organized in accordance with the laws of this State, the said Fred Rutland and Ann Neve Rutland, his wife, in furtherance of the unlawful and fraudulent scheme aforesaid,

procured from the Secretary of State of said State a certificate such as he is required by law to issue; certifying that there had been on the 31st day of December, 1895, filed in his Department "an instrument in writing, purporting to be articles of association of a corporation to be known as the Wisconsin Eclectic Medical College at Milwaukee, without capital stock," the business and purposes of which was to conduct a medical college, etc., and that, therefore the State of Wisconsin did certify and grant unto the said Wisconsin Eclectic Medical College at Milwaukee, the powers and privileges conferred by Chapter 66 of the Revised Statutes of the State of Wisconsin, and all acts amendatory thereof, for the purposes above stated, and in accordance with their said articles of association."

In witness whereof the said Secretary of State affixed his hand and official seal on the said 31st day of December, 1895.

Complainant further alleges upon information and belief that thereafter Fred Rutland and Ana Neve Rutland, for the purpose of carrying out their fraudulent scheme as aforesaid, caused a large number of advertisements to be inserted in newspapers throughout this and other States, and a large number of circulars soliciting persons to apply to it for diplomas and licenses such as would permit them to practice medicine and surgery in this and other States, said advertisements and circulars among other things stating in substance that if the applicant should be able to answer before a notary public of his own town certain questions to be submitted by said corporation, and upon the payment of a fee prescribed by said corporation, that said corporation would issue a diploma to such persons, which diploma would enable such persons to practice medicine in this and other States of the Union, and in proof of its authority to issue such diploma, and for the purpose of inducing persons to act upon these statements, said Fred Rutland and his wife would send out with such circulars a copy of the certificate issued by said Secretary of State, as aforesaid, and would further allege in said circulars that the State of Wisconsin had satisfied itself that the purposes of the corporation were regular and in accordance with the law, and had accepted a fee for incorporation and affixed its seal to the charter of said corporation, which charter declared the purposes and methods of the corporation, and that the State thereby had sanctioned such purposes, and that therefore no person or power could disturb either said college or its graduates.

That by means of the authority apparently conferred upon said corporation by its articles of incorporation and through said advertisements and said circulars the said Fred Rutland and wife have induced a great many persons to apply to them for and to pay them considerable sums of money for such diplomas, and have issued a great many of such diplomas to such persons, who have made no preparation or study of either the science of medicine or surgery, and who are wholly unfit and incompetent to practice either the science of medicine or surgery.

Complainant denies that he has any knowledge or information sufficient to form a belief as to how many of such diplomas have been issued, but alleges that a large number of them have been issued, and that Fred Rutland and Ana Neve Rutland, his wife, have by the means aforesaid fraudulently procured considerable sums of money, the exact amount of which complainant is unable to state, but he alleges upon information and belief that said Fred Rutland and wife have received for each of said diplomas a sum varying from $15 to $60, according to the ability of the applicant to pay for the same.

Complainant alleges upon information and belief that not only was said corporation organized as aforesaid solely for the purpose of enabling its incorporators to carry on the fraudulent business above described, but that said fraudulent business above described is now and will continue to be its only business so long as said corporation shall be permitted to exist.

That the carrying on of said business is detrimental to the advancement of the science of medicine and surgery, as well as contrary to good morals and public policy. That it directly tends to encourage ignorant, unscrupulous and wholly unfit persons to practice the important profession of medicine and surgery, thereby greatly endangering the welfare and good health of many of the people of this State.

In short, that the carrying on of said business by said corporation is clearly a willful misuse and abuse of the privileges and franchises conferred upon it by its articles of incorporation.

WHEREFORE, Complainant prays the Court that it will vacate the charter and annul the existence of the said Wisconsin Eclectic Medical College at Milwaukee, together with such other and further relief as to the Court may seem just and equitable.

Medical Society of State of Pennsylvania.

HARRISBURG, PA., June 15, 1896.

To the Editor:—In your issue of May 30, page 1092, it is stated the "next convention will be held at Pittsburg in September, 1897." The next meeting of the Medical Society of the State of Pennsylvania will be held in Pittsburg, Pa., the third Tuesday of May, 1897. There was some mention of September, but May is provided for in the By-Laws. Convention is not a good word to use for meetings of medical men, though a good many journals use it, our JOURNAL should set a better example. The above correction of date and title is so you can have the list of meetings correct. Very truly,

W. T. BISHOP, M.D.

The Journal Itself.

NEW CASTLE, IND., June 5, 1896.

To the Editor:— . . . . It is the best medical journal published, the best the ASSOCIATION has ever had, and improving weekly. G. W. BURKE, M.D.

LIBERTY, MO., June 14, 1896.

To the Editor:—Allow me to compliment the JOURNAL as one of the best in the United States.

J. M. ALLEN, M.D.

CHICAGO, June 6, 1896.

To the Editor:—In enclosing my vote, I take pleasure in asking to be allowed to thank you for your good work on our JOURNAL. I think it is *the* high-class weekly for the general profession in the United States. Cordially yours,

ALBERT B. HALE, M.D.

CLYDE, N. Y., June 12, 1896.

To the Editor:—With great pleasure I acknowledge the receipt of my much wished for copy of the JOURNAL of Dec. 28, 1895. I am more than ever tenacious that there shall be no break, as, without flattery, under the present editorial conduct, it is a library of itself, and the best medical journal now published.

I assume to be a competent judge, as I have been a reader of it since its first publication in the weekly form.

Yours truly, D. COLVIN, M.D.

CINCINNATI, June 5, 1896.

To the Editor:—I enclose to you my ballot, as also my check for $5 for yearly dues.

Now, my dear Doctor, I want to thank you for your distinguished services as Editor of the JOURNAL. I think it ranks with the journals of the East.

The tone of the JOURNAL is high. It firmly supports the Code. In my opinion, it will grow and grow, and show the world that no section can control the Western and Southern profession. Wishing you and the JOURNAL all success, I am

Yours truly, JOHN A. MURPHY, M.D.

PUBLIC HEALTH.

Dr. Bond of Gloucester, Eng., sends us a copy of a useful leaflet drawn up by him and entitled "Our duty in regard to Vaccination, or fifteen reasons why we should believe in the efficacy of Vaccination as a Preventive of Smallpox." This might be distributed broadcast in those districts where recalcitrant Board of Guardians have failed to do their duty.

Low Sickness-Rate in the German Army.—It is pleasant now and then to put one's finger on a fact that sustains faith in the application of hygienic measures. The General Staff Surgeon of Prussia reports that by the energetic application of hygienic measures—which include vaccination and revaccination—the invaliding among troops has been reduced 42 per cent. since 1868, and the mortality has been lessened 57 per cent., which means that two thousand men were alive at the end 1895 who would not have been had the former conditions obtained.

Schools and Disease; A Model Preventive System.—Dr. Leslie McKenzie, the Health Officer for the Borough of Leith, refers in his annual report for 1895 to the system followed in the town for the better prevention of the spread of infectious disease by the agency of schools. Each day an official of the School Board of Leith calls upon the health officer for the purpose of receiving lists of infectious cases notified to him, and then proceeds to distribute particulars to the different masters whose schools are interested in the cases, with the view of at once securing the absence from school of all children from an infected house until the house has been declared to be disinfected, etc., to the satisfaction of the health officer or some medical practitioner. Headmasters also notify to the School Board all cases of sickness coming to their knowledge, and thereupon similar steps are taken. The system is modeled on that obtaining at Glasgow, and gives satisfaction. Given the strict carrying out of the plan it ought to succeed.—*British Medical Journal.*

Annual Death Rate in Peru.—Odriozola's address at the Commencement of the University at Lima, contains the statement that the annual death rate at Peru is from 35 to 40 per thousand, of which a third is due to tuberculosis, while many of

the rest, and an immense proportion of the ills, are due to alcoholism in its effects on generation after generation. As the population of Peru is so small he urges that the very existence of the nation, to say nothing of other reasons, demands the improvement of this state of affairs. Special institutions should be established for the tuberculous poor, one in the mountains and one at the seashore, which might save many lives now doomed, while preventing the infection of countless others. The climate of Peru is peculiarly healthful, and careful sanitation might make it the most favored spot on the globe instead of its present record of elevated mortality.—*El Monitor Medico*, May 1.

The Prevention of Caisson-Disease.—According to the *Medical News* the prophylaxis of this affection, or chain of symptoms, has been the subject of experimental investigation in France. M. Hersent, a civil engineer, expresses the firm conviction that the large sacrifice of life in the past has been due to the rapid variations in the degree of compression brought about by ignorance or carelessness. He found that dogs could endure, without danger, a pressure of seventy-five to eighty pounds to the square inch for as much as five hours, provided that twenty-five minutes were occupied in gradually producing this amount of compression and one and a half hours in "decompression," a uniform temperature being maintained. Practically the same experiments, with perhaps a more gradual change in the pressure, were carefully made upon workmen, with only a little lassitude, lumbago, and slight prickling sensations of the surface resulting. It was thus demonstrated that without overtaxing the workmen they can labor uninterruptedly for four hours or more under a pressure of seventy-five pounds or more; that is to say, at 150 to 175 feet below sea level, on condition that they should experience a very slow compression and "decompression," and that the temperature be uniformly maintained.

The Identity of Diphtheria in Man and the Lower Animals.—The *British Medical Journal* quotes from the article on the above subject, by Dr. Leon Gallez, of Chatelet, in the *Bulletin de l'Académie Royale de Médecine de Belge*. The writer states that the bacterial proof of the non-identity of the diphtheric organisms found in man and the lower animals, such as the pigeon, chicken, calf, rabbit, cat, dog, horse and pig, is not conclusive. On the other hand, the numerous observations of the transmission of the disease from man to the lower animal, nine cases being cited from the literature upon this subject, and vice versa, seventy-two observations, are considered by Gallez to be almost positive proof of the identity of the different organisms which have been described in connection with diphtheria in man and the lower animals. Four histories are also given in which the transmission of human diphtheria to an animal has been in return followed by its recommunication to man. While the morphology is different, it is not more so than can be explained by the variations of the Klebs-Löffler bacillus as seen upon different culture media, likewise the symptomatology differs on account of the various anatomic peculiarities of the different species of animals in which the disease occurs. The author considers that we have in animals both an accidental form and an habitual one, the latter being merely a repetition of the culture of successive generations in the individual of the same species, the organism finally taking on special characteristics.

Salutary Influence over Medical Education of a National Board of Examiners.—An editorial in the *Public Health Journal*, May, presents the following argument on behalf of a National Department of Health: During the last few years nearly all the States of the Union have passed stringent laws with a view to regulate the practice of medicine, abolish quackery and elevate the standard of medical education, and in order to test the qualifications of physicians proposing to practice, examining boards have been created. In many of the States having such boards no weight whatever is given to the fact that a physician who may wish to locate in such State already has a diploma from some medical college of high standing; that he may have already honorably passed the examining board of some other State, and has been perhaps for many years a successful or even eminent practitioner; he must be again examined by the State board to which he desires to remove. These matters are regulated much better in France, and, we believe, in other European countries. When a student has passed his examination before any of the French medical faculties, his diploma is indorsed by the government; that done, he has a right to practice his profession wherever the tricolor flies. The cumbersome and unjust methods adopted by the several States in licensing physicians to practice should be terminated with as little delay as possible. We are of the opinion that the various State medical societies should co-operate to formulate plans for the creation of a National Examining Board, which should have the power to examine physicians and grant certificates to practice, valid in any part of the United States, as well as to indorse the certificates of State boards, thus rendering them universally valid in this country without further inquiry.

Cause of Death Following Serum Injections.—A most interesting series of experiments have been made by Drs. A. Siebert and F. Schwyzer of New York City, with a view of determining the cause of sudden death following the injection of antitoxic serum. Their processes, results and conclusions form the subject of a paper read before the American Pediatric Society at its meeting in Montreal, May 26, ult. The scope of the experiments had reference to: 1. The possibility that the serum itself might do the killing, either by entering the circulation too rapidly and in too large a quantity by an opened vein, or by poisonous substances having formed in the antitoxin in consequence of decomposition. 2. The possibility that the carbolic acid used in preserving the serum was the cause of death. 3. The possibility that death is caused by the injection of air into the blood current with the serum.

The experiments made to determine these three possibilities seem to have been made, judging by the detailed accounts, with due care and thoroughness and upon them the authors base the following statements and conclusions: "1. Antitoxic serum does not seem to be capable of causing threatening symptoms and speedy death, even when brought quickly into the blood current in very large doses. 2. The carbolic acid used in preserving the antidiphtheritic serum must be in such a weak solution as to be entirely unable to cause the characteristic carbolic convulsions produced in every one of our second series of experiments. The absence of these convulsions in the cases of sudden death in patients, the entirely different group of symptoms reported in them and the fact that guinea pigs and rabbits will survive even very large and concentrated doses of carbolic acid injected into a vein, lead us to discard the possibility of this drug having caused the reported deaths. 3. Even very small quantities of air caused severe disturbances and ultimate cessation of breathing in every animal experimented upon. These disturbances are entirely analogous to the symptoms reported as preceding the sudden deaths after antitoxin injections. Air is found alongside of the fluid in every syringe used for hypodermic injections, and being pressed under the skin with the fluid may readily come in contact with a punctured cutaneous vein and so may enter the blood vessel and the right heart, even before the serum has been absorbed. "In view of these facts and of our experiments, we here express our firm opinion that the sudden deaths reported after antitoxin injections were caused by injected air and not by antidiphtheritic serum." This conclusion would be more forcible if the fact were stated that in ordinary hypodermic injections of other substances instances of sudden death have been so

uncommon as altogether to escape notice. Every practitioner we believe invariably excludes the air from the syringe before making the injection. Is it supposed that his practice changes when using antitoxin?

A New Anti-tetanus Serum.—The following circular of the New York City Board of Health shows the enterprise and industry of the bacteriologists of that Board:

"The New York City Health Department is prepared to furnish antitoxic serum for the treatment of tetanus. Each vial contains 20 c.c. of serum, having an immunizing power of 1 to 3,000,000; *i.e.*, 1 c.c. of serum protects 3,000,000 grams of guinea pigs in weight from a fatal dose of tetanus toxin. The average initial dose of the serum varies with the gravity of the case and the time when treatment is begun. The remedy is administered by deep hypodermic injections, a large syringe (such as has been employed for diphtheria antitoxin) being preferably employed for the purpose, although an ordinary hypodermic syringe carefully cleaned may be used, the barrel of the syringe being repeatedly filled. Some point on the anterior surface of the body should be chosen for the injection, where there is an abundance of subcutaneous cellular tissue, as the anterior surface of the abdomen or thorax or the outer surface of the thigh. Before the remedy is administered the skin should be carefully washed with some disinfecting solution, and the syringe carefully sterilized and then washed with sterilized water. The solution is rapidly absorbed and it is better not to employ massage over the point of injection. It is of vital importance in tetanus that the antitoxin be administered at the earliest possible moment, as the dose required to neutralize the tetanus toxin absorbed increases with great rapidity with each hour's delay. When the treatment is begun at the first appearance of tetanic symptoms and they do not point to a very severe infection, and especially when the incubation period has been long, *e.g.*, two weeks; one vial, or 20 c.c., may suffice for the first injection, and, according to the results, one-half the quantity or the same quantity should be repeated as intervals of from six to twelve hours during the four following days. If the infection is intense, as shown by a short incubation period, *e.g.*, five to eight days; or by the rapid development of the tetanic symptoms and by the predominance and intensity of bulbar phenomena, or if the treatment is begun several days after the appearance of the tetanic symptoms, even if at the time of injection they are not severe, the contents of one vial should be at once injected, and the dose repeated at short intervals, according to the effect produced on the tetanic symptoms. The doses required where the wound has been previously untreated, even if the symptoms are slight, are usually large. The dose for children under twelve should be one-half or less that for an adult. The use of tetanic antitoxin does not preclude the employment of other remedies, such as chloral, the bromids, physostigmin or morphin. Some one or more of these remedies should be employed in full doses. It is also thought to be advantageous to give large amounts of water to the patient for its diuretic effect, as the tetanus toxin is eliminated by the kidneys. Where tetanus follows some wound of the surface, this should be treated freely with some preparation of iodin in solution, to destroy the toxins in it. The ordinary antiseptic solutions, such as carbolic acid and bichlorid of mercury, are of little value for this purpose. The exact value of tetanus antitoxin in the treatment of this disease and the best method of administration have not been fully determined and the Health Department of the city of New York especially requests that all persons using this preparation of antitoxic serum will forward a full report to the Department of the case and the results of treatment. All public institutions in New York City, on application, will be furnished with tetanus antitoxin free of charge.

"Approved by the Board of Health at a meeting held May 19, 1896. EMMONS CLARK, Sec'y; CHARLES G. WILSON, Pres.

"Address The Bacteriological Laboratories, Health Department, Criminal Court Building, Center, Elm, White and Franklin Streets. Telephone, 448 Franklin."

Health Reports.—The following health reports have been received in the office of the Supervising Surgeon-General, U. S. Marine-Hospital Service:

SMALLPOX (UNITED STATES).

Louisiana: New Orleans, May 31 to June 6, 4 cases, 1 deaths.

SMALLPOX (FOREIGN).

Birmingham, Eng., May 23 to 30, 2 cases.
Bombay, India, April 28 to May 12, 58 deaths.
Buenos Ayres, Brazil, March 1 to 31, 24 deaths.
Calcutta, India, April 25 to May 2, 1 death.
Callao, Peru, May 3 to 17, 13 deaths.
Genoa, Italy, May 23 to 30, 1 case.
Guayaquil, Ecuador, May 15 to 30, 7 deaths.
Licata, Italy, April 16 to 23, 3 deaths.
Madrid, Spain, May 19 to 26, 10 deaths.
Naples, Italy, May 23 to 30, 4 cases, 1 death.
Odessa, Russia, May 11 to 23, 7 cases, 4 deaths.
Pernambuco, Brazil, April 1 to 30, 55 deaths.
Prague, Austria, May 16 to 23, 6 cases.
Rotterdam, Holland, May 23 to 30, 1 case.
Tuxpan, Mexico, May 16 to 23, 3 deaths.
Warsaw, Russia, May 9 to 25, 4 deaths.

CHOLERA.

India: Bombay, April 28 to May 12, 31 deaths; Calcutta, April 25 to May 2, 252 deaths.

YELLOW FEVER.

Brazil: Rio de Janeiro, May 2 to 9, 38 deaths; Pernambuco, April 1 to 30, 8 deaths.
Buenos Ayres, March 1 to 31, 5 deaths.
Cuba: Havana, May 28 to June 4, 9 deaths.

ASSOCIATION NEWS.

Notice.—Members of the ASSOCIATION desiring to attend the Second Pan-American Medical Congress at Mexico in September, as delegates to that body, will please address the Permanent Secretary, William B. Atkinson, M.D., 1400 Pine Street, Philadelphia, Pa., for their credentials.

Section on Materia Medica, Pharmacy and Therapeutics.—*To the Editor:*—Enclosed please find copy of resolutions passed by the Section on Materia Medica, Pharmacy and Therapeutics, AMERICAN MEDICAL ASSOCIATION, at Atlanta, Ga., May 7, 1896, in regard to a paper on "Anti-Phthisin," read by Dr. Ambler.

Dr. Stewart has written you in regard to it. I also enclose the address of Professor Klebs, delivered on the same subject.

Yours truly, W. B. HILL, M.D.

Milwaukee, Wis., June 11, 1896.

The Committee beg to report as follows:

That Dr. Klebs disclaims any knowledge that Anti-Phthisin is a proprietary remedy, although he admits having heard that the name was copyrighted in Germany, and that he has heard that application for the same has been made in this country.

We also find that all rights to this remedy have been transferred to Karl von Ruck, and therefore find that it does come in under the head of proprietary medicines, and respectfully refer the publication of the paper to the Business Committee for their consideration.

WHEREAS, The AMERICAN MEDICAL ASSOCIATION'S Code of Ethics has declared its opposition to secret remedies and refuses to be used as a body, and through its official organs, to further the interests of any and all patent medicines; and

WHEREAS, Dr. C. P. Ambler, Associate Medical Director and Laryngologist of the Winyah Sanitarium of Asheville, N. C., representing and defending the Klebs Anti-Phthisin before the ASSOCIATION and also Dr. Karl von Ruck, the controller of this product, has declared before the Section on Materia Medica, Pharmacy and Therapeutics, that it is true that Klebs Anti-Phthisin is protected by copyright and that a patent has been applied for both in this country and Germany, to restrict its production for the benefit of the owners of the patent.

Resolved, That a committee of three be appointed to investigate the matter without delay, and report its finding to the proper officers of this ASSOCIATION and in the columns of the JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION.

Resolved, further, That the Committees on Ethics and Publication and such other committee as the Chairman of the Section may deem fit, shall take cognizance of the matter and take such steps as may be considered necessary to prevent the prostitution of this ASSOCIATION and of its JOURNAL for the advancement of this remedy if found excluded by the rules and laws of medical ethics, and shall publish their finding in said JOURNAL.

SOCIETY NEWS.

Chicago Medico-legal Society.—At the last meeting of this Society the following officers were elected to serve for the ensuing year: President, Dr. E. J. Doering; first vice-president, Dr. Sanger Brown; second vice-president, Dr. A. H.

Cooke; treasurer, Dr. Jos. Matteson; secretary, Dr. John Ridlon, 103 State Street.

Washington State Medical Society.—At the annual meeting of this society held in Tacoma May 19 and 20, Dr. R. L. Thomson, of Spokane, was elected president, and Dr. J. M. Semple, of Medical Lake, Secretary. The next meeting will be held in Spokane, May 1897.

Nebraska State Medical Society.—At the annual meeting the following officers were elected for the ensuing year: President, F. D. Haldeman, Ord; first vice-president, J. Lue Sutherland, Grand Island; second vice-president, O. Grothan, St. Paul; recording secretary, G. H. Simmons, Lincoln; treasurer, W. M. Knapp; corresponding secretary and librarian, H. B. Lowry, Lincoln. The next annual meeting will be held in Lincoln.

Veterans of Indian Wars.—The latest society with military features is the Society of Veterans of the Indian Wars. Article 3 of the constitution provides that any past or present officer or acting officer, non-commissioned officer or soldier of good moral character and reputation, who has served in the army of the United States during an Indian war, and who has actually been in service in the country occupied by hostile Indians, and whose services terminated honorably and who can furnish suitable certificate as to such services, is entitled to active membership. No honorary membership is permitted. Dr. W. T. Parker, Groveland, Mass., will furnish information on this subject to those who desire it.

Association of Life Insurance Medical Directors.—The following are the officers of the Association for 1896-7: President, Edgar Holden, M.D., Newark, N. J.; first vice-president, H. Cabell Tabb, M.D., Richmond, Va.; second vice-president, J. H. Webb, M.D., Waterloo, Ont.; secretary, O. H. Rogers, M.D., New York City; treasurer, John W. Brannan, M.D., New York City; executive committee, Drs. Edward Curtiss, New York City, Abel Huntington, New York City, G. R. Shepherd, Hartford, Conn. and Albert Wood, Worcester, Mass. Dr. J. W. Fisher is chairman of a special committee on collective investigation on accurate statistics on certain kinds of impaired lives and Dr. E. H. Hamill is chairman of a committee on research as to impaired family history.

Mississippi Valley Medical Association.—A meeting of the Executive Committee of this association was held at Atlanta, on May 6, and the following gentlemen were appointed to deliver addresses: Dr. H. N. Moyer, Chicago, address on medicine; Dr. Horace H. Grant, Louisville, address on surgery; the indications are that the meeting to be held at St. Paul, on October 20, 21, 22 and 23, will be the largest and most successful in the history of the association. As all the railroads will offer reduced rates for the round trip, an opportunity will be given to visit St. Paul and Minnesota during the most delightful season of the year. H. O. Walker, M.D. Detroit, Mich., president; H. W. Loeb, M.D., 3559 Olive Street, St. Louis, secretary; C. A. Wheaton, M.D., St. Paul, Minn., chairman committee of arrangements.

The American Medico-Psychological Association.—According to the *Boston Medical and Surgical Journal*, May 28, the fifty-second annual meeting of the Association, held in Boston during the last week in May, has been largely attended. An address of welcome was made to the society by Governor Wolcott, and the President, Dr. Richard Dewey, delivered an address on "Our Association and Our Associates." At the afternoon meeting papers were read by Dr. Theodore W. Fisher of Boston, Dr. W. Worcester of Danvers and Dr. Henry J. Berkeley of Baltimore. An evening session was held at the Hotel Brunswick, the headquarters of the Association, on which occasion there were given addresses by Dr. R. M. Burke of London, Ont., Dr. Joseph G. Rogers of Logansport, Ind., and by Dr. E. N. Brush. On Wednesday morning the annual election of officers took place, and in the afternoon the members, with ladies, were given a lunch at the McLean Hospital in Waverly. In the evening a reception was given to the members by the Boston Medico-Psychological Society at the University Club.

Concerning Antivivisection.—The American Laryngological Association, in annual session at Pittsburg, Pa., May 15, 1896, by unanimous vote, and by appended signatures of its officers and members of committee, hereby records its most earnest and emphatic protest against such legislation as that proposed by the bill entitled, "A bill for the further prevention of cruelty to animals in the District of Columbia," Senate bill 1552, in so far as this legislation embodies measures intended to control and restrict experimentation upon animals conducted in the government laboratories, the medical schools and other institutions of higher learning in the District of Columbia. In making this protest the Association begs to present to the members of Congress the following considerations: Animal experimentation has proved itself by years of usage, the most important and indispensable method of arriving at conclusions concerning the functions of, and the influences which modify or develop, all living organisms. All the greater advances which have been made in the science and art of medicine in recent years have been based, to a great extent, upon such experiments upon the lower animals, especially as conducted in the laboratories of the Government, and in other scientific institutions. These advances would, in fact, have been impossible without such aid. The untold benefit which mankind has derived, and will continue to receive, from these advances, need not be further detailed than to mention the inestimable boon conferred by the discovery and development of the antitoxin treatment of diphtheria, the inoculation for rabies, the detection for tuberculosis in animals, and the consequent lessening of its spread among human beings. The revolutionizing of surgical practice and the success attending the major operations by the introduction of antiseptic measures have been brought about chiefly through animal experimentation. The benefits derived from these experiments largely go to improve public health and prevent infectious diseases. This fact is often overlooked by the laity. J. H. BRYAN, M.D., Chairman of Committee; WILLIAM H. DALY, M.D., President; H. L. SWAIN, M.D., Secretary.

Ontario Medical Association.—This Association met at Windsor, Ont., June 3 and 4. President, F. LeM. Grasett, Toronto. The following papers were read: "The Treatment of Puerperal Sepsis," by H. T. Machell, Toronto; "The Operative Treatment of Mammary Carcinoma," by W. Burt, Paris; "The Preservation of the Perineum in Labor," by C. B. Oliver, Berlin; "Neurasthenia," by E. E. Harvey, Norwich: "Pregnancy Complicated with Retroversion—a Case," by Alex. Bethune, Seaforth; "Broncho-pneumonia," by A. E. Harvey, Wyoming; "Hemoptysis," by J. M. Cotton, Lambton Mills; "Movable Kidney and Another Way of Anchoring It," by F. B. Wilkinson, Sarnia; "Treatment of Abortion," by G. McKeough, Chatham; "Skin Grafting," by R. Whiteman, Shakespeare; "Glioma of the Brain," by A. J. Johnson, Toronto; "Roentgen Photography and Its Application to Medicine and Surgery, with Exhibition of Apparatus and Demonstration," by Edmund E. King, Toronto; "The Rational Treatment of Typhoid Fever," by J. P. Armour, St. Catherines; "Treatment of Phthisis," by W. B. Geikie, Toronto; "Phthisis as a Factor in the Causation of Insanity," by E. H. Stafford, Toronto; "Absorbable Ligature in Abdominal Surgery," by M. V. Mann, Buffalo, N. Y.; "Mixed Infection," by J. Caven, Toronto; "Missed Abortion," by F. R. Eccles, London: "The Total Stamping out of Transmittable Diseases," by A. Groves, Fergus. The following officers were elected: President, Dr. John Coventry, Windsor; First Vice-President, Dr. F. R. Eccles, London; Second Vice-President, Dr. Clark, Kingston; Third Vice-President, Dr. H. T. Machell, Toronto; Fourth Vice-President, Dr. J. C. Armour, St. Catharines; General Secretary, Jno. N. E. Brown, Toronto; Assistant Secretary, E. H. Stafford, Toronto; Treasurer, Geo. H. Carveth, Toronto. The next place of meeting is Toronto, Ont.

Indiana State Medical Society.—The following resolutions were unanimously adopted by the Indiana State Medical Society at Ft. Wayne, May 28, 1896, as presented by Dr. E. L. Larkins of Terre Haute.

WHEREAS, A bill is now pending before Congress known as Senate Bill No. 1552 entitled "A bill for the further prevention of cruelty to animals in the District of Columbia;" and

WHEREAS, Such a bill is an unjust reflection upon the humanity of the members of the most humane and charitable profession in the world, and especially against those engaged in experimental work; and

WHEREAS, The passage of such a bill for the District of Columbia would only serve as a nidus for its spread to other States; therefore, be it

Resolved, That the Indiana State Medical Society hereby indorses the report of the Committee on Vivisection of the AMERICAN MEDICAL ASSOCIATION and adopted by that body at the recent meeting in Atlanta; and be it further

Resolved, That the secretary be and is hereby instructed to immediately furnish each member of Congress from this State (House and Senate) a copy of this preamble and the resolutions, properly signed by the president and secretary under seal of the Society, together with a copy of the above named report, instructing them to oppose the action of the so-called Humane Society of the District of Columbia.

F. C. HEATH, M.D., Secretary.

Indianapolis, June 16, 1896.

BOOK NOTICES.

A Text-Book of Bacteriology. By GEORGE M. STERNBERG, M.D., LL.D., Surgeon General U. S. Army. Illustrated by heliotype and chromo-lithographic plates and 200 engravings. Cl., 8vo, pp. 693. New York: William Wood & Co. 1896.

This book is really a revision of the well-known Manual by the same author, published in 1892. The author says in the preface: "For the benefit of students of medicine and others who do not care especially for the detailed descriptions of non-pathogenic bacteria and the extensive bibliography contained in the Manual, this Text-Book of Bacteriology is now published. It comprises that portion of the Manual above referred to as printed in large type, revised to include all important additions to our knowledge of the pathogenic bacteria since the original date of publication." This is an honest revision and the reader will have cause to complain of few if any omissions. The same modesty has characterized the author's statements in this work in all matters concerning his own discoveries as in the Manual. With regard to the phagocytic action of the white corpuscles, he thus mentions his own clear priority over Metchnikoff: "Now the theory of phagocytosis assumes that the bacilli are picked up by the leucocytes and destroyed in their interior, and that immunity depends largely upon the power of these phagocytes to capture and destroy living pathogenic bacilli. The writer suggested this as an hypothesis as long ago as 1881, in a paper read before the American Association for the Advancement of Science in the following language: 'It has occurred to me that possibly the white corpuscles may have the office of picking up and digesting bacterial organisms which by any means find their way into the blood; the propensity exhibited by the leucocytes for picking up inorganic granules is well known, and that they may be able not only to pick up but to assimilate and so dispose of the bacteria which come in their way does not seem to me very improbable in view of the fact that amebæ, which resemble them so closely, feed upon bacteria and similar organisms.' At a later date (1884) Metchnikoff offered experimental evidence in favor of this view, and the explanation suggested in the above quotation is commonly spoken of as the Metchnikoff theory." He then quotes Metchnikoff extensively as showing the details of phagocytic action and refers to recent contradictory statements as follows, p. 257: "Numerous experiments have been made during the past two or three years with a view to determining whether pathogenic bacteria are, in fact, destroyed within the leucocytes after being picked up, and different experimenters have arrived at different conclusions. In the case of mouse septicemia, already alluded to, and in gonorrhœa, one would be disposed to decide, from the appearance and arrangement of the pathogenic bacteria in the leucocytes, that they are not destroyed, but that on the other hand, they multiply in the interior of these cells, which in the end succumb to this parasitic invasion. In both of the diseases mentioned we find leucocytes so completely filled with the pathogenic microörganisms that it is difficult to believe that they have all been picked up by a voracious phagocyte, which has stuffed itself to repletion, while numerous other leucocytes from the same source, and in the same microscopic field of view, have failed to capture a single bacillus or micrococcus. Moreover, the staining of the parasitic invaders, and the characteristic arrangement of the 'gonococcus' in stained preparations of gonorrheal pus indicate that their vitality has not been destroyed in the interior of the leucocytes or pus cells, and we can scarcely doubt that the large number found in certain cells is due to multiplication *in situ* rather than to an unusual activity of these particular cells. . . . We can not consider this question as definitely settled." The author then quotes Metchnikoff's views in full. The Americans may congratulate themselves that the ablest and most comprehensive text-book on bacteriology in the English language has been given to the world by one of their own countrymen. The publisher has done his part of the work with the uniform excellence which is characteristic of the house.

Typhoid Fever and Its Abortive Treatment. By JOHN ELIOT WOODBRIDGE, M.D. Copyrighted. Cl., 8vo, pp. 388. Price, $3. Cleveland, Ohio: L. Leavengood & Company. 1896.

This book is a revision of the various essays of the author, most of which have been published from time to time in this JOURNAL. His "theory" being: 1. Full acceptance of the microbic causation of typhoid fever; 2, an opinion that the bacilli in question may be destroyed in the body; 3, in consequence of that destruction the fever may be aborted or cut short. The means of accomplishing these laudible objects, Dr. Woodbridge thinks is found in the small doses of calomel and other drugs which he specifies. Few statements have met with more vituperative comment than the statement that typhoid fever may be cut short or aborted, and Dr. Woodbridge is not to be blamed if he repels some of the attacks with some heat, although enthusiastic as he is, he must admit that the majority is against his doctrine to-day. Whatever may be urged against Dr. Woodbridge's theories of treatment, all can agree with his notions of prophylaxis, which consist in the application of all known means of securing a good supply of pure drinking water and of preserving that water supply from pollution.

The chapter on diagnosis is an excellent one, and the book as a whole will constitute a valuable addition to the literature of the subject.

Instead of a series of essays, we look to see the work at its next edition grow into a systematic monograph on typhoid fever, for whether the antiseptic treatment of typhoid shall be generally adopted or not, the discussion on symptomatology, etiology and diagnosis will always be of value. The controversial character of the first essays in the volume are bound to attract attention, but in the next edition we trust the author may find it expedient to eliminate all that part of the book.

The Diagnosis and Treatment of the Diseases of the Rectum, Being a Practical Treatise on Fistula, Piles, Fissure and Painful Ulcer, Procidentia, Polypus, Stricture, Cancer, etc. By WILLIAM ALLINGHAM, F.R.C.S., Eng., and HERBERT W. ALLINGHAM, F.R.C.S., Eng. Sixth edition. Cl., 8vo, pp. 485. New York: William Wood & Co. 1896.

When a book has reached its sixth edition it has passed beyond ordinary criticism. We can only note changes, and satisfy ourselves by reference that recent literature has been

considered. In this respect the sixth edition of Allingham is not disappointing. In the treatment of internal hemorrhoids the Messrs. Allingham still prefer the ligature as a rule. They however give a careful review of other methods. In regard to injection by carbolic acid and other substances, they quote with approval, Matthews and Andrews, and say: "For our own part we agree with Dr. Matthews. We have tried the injection plan in many cases, but there was generally much pain, more inflammation than was desirable, a lengthy treatment and the result doubtful—certainly not a radical cure. For it must be borne in mind that though the injection of carbolic acid into the interior of piles may in some instances stop the bleeding for a time, yet it can not and does not in any way remove the tumors." Beside this, the danger of embolism is pointed out. We think the authors do not do full justice to the "clamp and cautery" operation, which is not only dismissed with scant reference, but with condemnation. "This operation has little to recommend it. As regards danger to life—after all, the issue of greatest moment—as far as our most careful researches have led to a conclusion, it is quite six times as fatal as the ligature properly and dexterously applied." In the Rush Medical College clinic, Chicago, both operators use the clamp with cautery, and in five years no case of severe hemorrhage has been recorded, but the clamp used is of the Smith pattern, quite different from the Allingham clamp, and for the prevention of after-hemorrhage the hard rectal tube covered with iodoform gauze is used. The pressure exerted by this tube is an entire support to the eschar formed by the red-hot iron. The authors favor colotomy in selected cases, but the operation should be either inguinal or lumbar as the nature of the case indicates. No surgeon's library may be considered complete without this edition of this old favorite.

Jahrbuch der Practischen Medicin. (Yearbook of Practical Medicine. By DR. J. SCHWALBE. Stuttgart: Ferdinand Enke. 1896.

This annual publication has been for many years a convenient and fruitful source of information to the German medical profession. To the English and American physicians the title of the work is misleading, as the book contains not only an accurate account of what has been done in the practice of medicine during the last year, but is equally reliable in giving valuable information of the advances in surgery, gynecology, obstetrics, ophthalmology, sanitation, physiology, pharmacy, etc., during the same period of time. Dr. Schwalbe has the assistance of a large corps of collaborators, and each one appears to have done his work well. The marginal annotations of the names of authors and subject matter are an important and convenient feature of the book. The work is not as exhaustive as Virchow's Jahrsbericht, but equally valuable and much more convenient for the busy general practitioner. It is an exceedingly useful work for reference, which should be in the hands of every German speaking physician and surgeon.

The National Formulary of Unofficial Preparations. Revised edition. By authority of the American Pharmaceutical Association. Cl., 8vo, pp. 195. 1896.

This is the second revision of this well-known work. The revision committee was composed of the following well-known members of the American Pharmaceutical Association: C. Lewis Diehl, A. B. Stevens, C. T. P. Fennel and Chas. Caspari, Jr. Most of the articles, or at least a large portion of them, should have been included in the U. S. Pharmacopeia, but even then we suppose as some sort of a supplement to the Pharmacopeia. In this edition the formulas of such preparations as were dropped from the last Pharmacopeia have been included. The decimal system of weights and measures has been introduced, and the work is now, in the language of the committee, "abreast of the times." We commend it to the profession.

Transactions of the Royal Academy of Medicine in Ireland. Vol. XIII. Edited by WILLIAM THOMSON, M.A., F.R.C.S., General Secretary; surgeon to the Richmond Hospital, Dublin. Cl., 8vo. Dublin: Fannin & Co., Ltd. 1895.

In this volume the high standard of its predecessors has been maintained. It is divided into six sections as follow: Medicine, surgery, obstetrics, pathology, state medicine, anatomy and physiology, containing articles by some of the most eminent of the European medical men.

Archives of Clinical Skiagraphy. By SYDNEY ROWLAND, B.A. Camb. The first number has just been published. Price, 4s. net per issue; with postage, 4s. 4½d. London: The Rebman Publishing Company, Limited.

This will be a record of the progress of medical photography and its various branches. Each number will contain six handsome collotypes, printed on the finest art paper and representing clinical cases in which diagnosis has been effected with the aid of Röntgen's X Rays. (The size of each plate is 10 by 12 inches.) Each plate is accompanied by explanatory text, printed on the best supercalendered paper (10 by 12 inches). The first number contains an introduction giving a full illustrated description of the methods relating to skiagraphy.

The Three Ethical Codes. Price, 50 cents. Detroit, Mich.: The Illustrated Medical Journal Co., Publishers.

This purports to give the Code of Ethics of the AMERICAN MEDICAL ASSOCIATION, the American Institute of Homeopathy and the National Eclectic Medical Society. It is in convenient size and well printed.

The Audiphone and How to Use It in Hearing Through the Teeth. By RICHARD S. RHODES. Cl., 8vo, pp. 35. Chicago: Rhodes & McClure. 1895.

This book comprises a lecture on the audiphone and its use in hearing through the teeth, delivered by its inventor, Dr. Rhodes, before the fourteenth convention of American teachers of the deaf, at Flint, Mich.

NECROLOGY.

AGATHON WERNICH, at Berlin, aged 53. His name is familiar to Americans by his studies on abdominal typhus, beri-beri, etc., and his numerous contributions to hygiene and medical jurisprudence. He was, perhaps, better known at the antipodes, as he was for three years professor at the College of Physicians and Surgeons of Tokio when it was first opened. As a practical and scientific physician his loss is sadly felt in Berlin.

GERMAIN SÉE. Paris paid the last honors, May 17, to this distinguished physician, "the apostle of physiologic therapeutics." Although he did not add anything directly to the "materia medica," yet many of our most important remedies owe their prompt appreciation and adoption to his broad and constant outlook over the international world of science, and his ability to perceive and decide what was of true value in the new things presented. He stood sponsor in this way for the salicylates in the treatment of rheumatism, for potassium iodid in asthma, for caffein and theobromin in renal and cardiac insufficiency, etc. His articles on the treatment of typhoid fever with quinin and alcohol, on strophantin, terpin, etc., are classics, while those who have been signaling albuminuria as the result of antitoxin treatment of diphtheria, should read Sée's article on "Croupous Albuminuria" published in 1858. His large works, "Médecine Clinique," "Exper. Pathology," etc., are too well known to need mention.

DAVID C. CHAMBERLAIN, M.D. (Castleton Medical College, Castleton, Vt., 1837), of Leroy, N. Y., at Detroit, Mich., June 4, aged 81. He was a surgeon of volunteers during the late war.——ASA HOW, M.D. (Western Reserve University Medical Department, 1886), at Fairfield, Iowa, June 5, aged 78. He founded the Iowa Institution of Science.——J. W. PHIPPS,

M.D. (Rush Medical College, 1850), at Evansville, Ind., June 8, aged 79. He was a veteran of the late civil war, having served as a surgeon in the Eighth Illinois Volunteers.——B. G. Culver, M.D., at Kane, Mo., May 28, aged 65.——M. H. Picot, M.D. (Jefferson Medical College, 1861), at Geneva, N. Y., June 5.——John Gillespie, M.D. (Harvard University Medical School, Boston, Mass., 1885), at Boston, Mass., June 5, aged 36.——John McLean Flemming, M.D. (Rush Medical College, 1872), at Chicago, Ill., June 10, aged 50.——Edwin A. Hill, M.D. (Harvard University Medical School, Boston, Mass., 1850), at East Killingly, Conn., of hepatic cancer, May 30.——Dr. O. T. Azbill, M.D., died suddenly on June 7 at his home near Big Hill, Ky., of apoplexy. He was about 60 years old.

MISCELLANY.

Franklin E. Murphy, M.D., has been elected secretary of the Kansas City Medical College.

Arthur R. Elliott, M.D., of Chicago, has been elected Professor of Preventive Medicine and Urinary Diagnosis, at the Post-Graduate School, Chicago.

Health Office Report.—The health Office report at Detroit, Mich., for week ending June 6, 1896: Deaths: Under 5 years 35, total 85; births, male 52, female 40, total 92. Contagious diseases: diphtheria, last report 17, new cases 4, recovered 13, died 1; scarlet fever, last report 23, new cases 8, recovered 8; measles, last report 3, new cases 1, recovered 2.

Asked to Change its Name.—Press dispatches of June 13, state that President Eliot, of Harvard University, has filed a bill in the Federal court asking that the "Harvard" Medical College of Chicago take some other name. It is to be hoped that success will crown the efforts of the Massachusetts school, as it is too palpable an attempt to make capital out of a great name.

Woman's Medical College, Baltimore.—This college has lengthened its annual course to eight months (October 1 to June 2). The following appointments have been made in the faculty: R. Tunstall Taylor, M.D., Professor of Orthopedics; Thomas C. Gilchrist, M.R.C.S., Professor of Dermatology; Henry P. Hynson, Ph.G., Professor of Pharmacy; G. Milton Linthicum, M.D., Professor of Physiology; Kemp Battle Batchelor, M.D., Associate Professor of Obstetrics. A chair of Mental Diseases has been added; also department of bacteriology and embryology.

Menthol in Gastric Diseases.—Dr. A. L. Benedict, in the *American Therapist*, speaks favorably of menthol, as follows: It is an excellent antiseptic for stomach and intestine. I usually employ ten centigram doses, two or three hours after meals, to act in the intestine. For the stomach I prefer to spray it through the stomach tube. Aside from its antiseptic properties, this drug is stimulating to the local blood supply, and hence, to secretion, and it also relieves painful spasm of smooth muscle.

Must Receive all Insane.—A resolution was passed by the House of delegates of Virginia, in which the senate concurred, and which was approved March 4, 1896, that all persons who have been legally adjudged insane, who have or may hereafter make application for admission into a State hospital, shall be received. The superintendents of the several State hospitals shall be required to send promptly for all such insane persons and receive them until all vacancies in the same are filled.

Can Marry.—Sections 2224 and 2225 of the code of Virginia were amended by the 1895-6 general assembly so that the former section shall not be construed as prohibiting a man from marrying an aunt of his former wife, and the latter section no longer contains the provision that no woman shall marry the husband of her brother's or sister's daughter, adding that if any woman shall have heretofore married her brother's or sister's deceased daughter's husband, such marriage shall be considered valid.

Can Have Order for Examination Modified.—The general term of the city court of New York holds, in the case of Lawrence v. Samuels, April 27, 1896, that, in a personal injury case, where the defendant procures an order from the court, that the plaintiff, a female, submit to an examination, before trial, by a physician named in the order, the fact that the order compels her to submit to an examination by a physician not of her own sex, is not a ground for the vacation of the order, she not having made any effort to have the order modified, though, as the New York code provides that she may require the examination to be made by such a physician, it furnishes ground for applying to have the order modified.

The Homeopathic Crusade.—Senator Gallinger's report in favor of legislation to restrict animal experimentation in the District of Columbia, which is a rehash of the report of the American Humane Association, brings to light the important fact that the homeopathic fraternity has originated and is pushing this crusade against scientific investigation and progress. It is a clandestine effort to humiliate the science of medicine. The Senator concludes his report with the statement that it is the unanimous expression of opinion by the Senate Committee on the District of Columbia, which is equivalent to the assertion that the Senate of the United States will unite with him in the promotion of this homeopathic crusade. Will the profession submit?

Case for Expert Testimony.—Whether criminal charges preferred by a female patient against a physician are the result of hallucination, while under the influence of chloroform and ether, the supreme court of appeals of West Virginia holds, in the case of State v. Perry, decided March 18, 1896, is a question that must be determined by expert medical evidence, as it is not a matter of ordinary human experience or knowledge. If such testimony establishes the probability of such hallucination, and such charges depend entirely on the uncorroborated and contradicted testimony of such patient, the jury, it says, should acquit the accused. Whether a person with a wooden leg is incapacitated from kneeling, and thereby rendered incapable of committing an offense while kneeling, in the manner charged in this case, the court also holds as a subject-matter of inquiry justifying the introduction of expert medical testimony, to assist the jury in arriving at a correct conclusion.

Hot Water Baths in Two Cases of Cerebro-spinal Meningitis.—Woroschilski has followed the example of Aufrecht and employed baths at 32 C. in a couple of cases of severe cerebro-spinal meningitis, with such success that he thinks this treatment should be widely adopted. The effect from the first bath was surprising. The irregular pulse became regular, the temperature fell, and the patient felt so much improved in every way that he begged for more. One case was complicated with heart disease, but the relief was equal to the other. The usual remedies, ice, calomel, iodin, etc., were also given. Bälz and Renaut have also advocated hot baths in children's bronchitis. —*Memorabilien*, April. This treatment has been used in America for a long time. In a local epidemic of 1873 in Illinois, there was much testimony in favor of the benefit of warm water immersion.

Treatment of Acne.—Franke states in the *Med. Neuigkeiten*, that the important point in treating acne is to prevent the transference of the infective germs to new localities and glands. Hence he strictly forbids all massage. Each papule must be allowed to develop naturally undisturbed. When it is ripe, the pus discharged on slight pressure should be carefully wiped off with a clean rag, and the skin around it disinfected with a 1 to 1,000 sublimate solution, concluding with the application

of a thin layer of ungt. len. The skin of the face must never be touched with the bare fingers, and they must not come in contact with the skin anywhere after handling the ripe papule. Excellent results, according to Franke, follow this treatment if persevered in for months.—*Memorabilien*, April.

Rush Medical College.—The annual commencent exercises of Rush Medical College, Chicago, were held May 27. The audience that assembled to witness the exercises was a large one. The degree of Doctor of Medicine was conferred upon 211 candidates. Beside the usual degrees, an honorary degree was conferred on Dr. Nathan M. Dobson of Berlin, Wis. Prof. H. M. Lyman delivered the doctorate address. Sumner A. Edmunds was valedictorian. The faculty and members of the Alumni Association held the annual banquet of the college at the Auditorium Hotel. Nearly six hundred guests were present and the occasion was made most enjoyable. Dr. A. C. Cotton, a graduate in the class of 1878, officiated. Among the speakers were President William R. Harper of Chicago University, Luther Laflin Mills, Dr. J. B. Hamilton and Dr. J. E. Cox.

"Palatable Castor Oil."—We are in receipt of the following letter from Mr. A. J. White, of New York, in which he encloses a list of patents dating from Sept. 10, 1889, to Aug. 14, 1894, inclusive, and warning druggists against using this formula, because of liability to lawsuits for infringement of patent. We have no personal knowledge of the case. We quote Mr. White's letter for general information.

NEW YORK, June 6, 1896.

To the Editor:—A paragraph is going the rounds of the medical journals, giving a formula for making Palatable Castor Oil. This formula is patented as per following list of patents: No. 410,940, dated Sept. 10, 1889; No. 470,715, dated March 15, 1892; No. 470,714, dated March 15, 1892; No. 524,513, dated Aug. 14, 1894; No. 524,514, dated Aug. 14, 1894; and if druggists are induced to prepare this article themselves, it will lead to a multitude of lawsuits like those instituted in the "Drive Well" case. Some scheming lawyer would like to take up this case for one-half the profits, and I think the journals should warn the druggists so that they may not be caught in a trap. Yours very truly, A. J. WHITE.

Professor Edwin Klebs.—The removal of Professor Klebs to Chicago has been signalized by his immediate appointment as Professor of Pathology in Rush Medical College and in the Post-Graduate Medical School. This distinguished bacteriologist is already well known in America, but as a reminder to our readers of the valuable services of Professor Klebs, we append a list of the titles of some of his more important papers. His appearance is that of a well preserved, good humored, scientific gentleman, without a tinge of brusqueness or hauteur, still in vigorous manhood.

America, and particularly Chicago, should be congratulated on this notable acquisition to the teaching force of the Northwestern metropolis.

KLEBS, EDWIN: Handbuch der Pathologischen Anatomie. Berlin. A. Hirschwald, 1868-80.

Beiträge zur Pathologischen Anatomie der Schusswunden. Nach Beobachtungen in den Kriegslazarethen in Carlsruhe, 1870-1871. Leipzig, 1872.

Studien über die Verbreitung des Cretinismus in Œsterreich sower über die Ursache der Kroprbildung. Prag, 1877.

Ueber die Umgestaltung der Medicinischen Anschauungen in den lezten drei Yahrzehnten, Vortrag. . . . Nebst einem Vorwort enthaltend die Entgegnung auf Virchow's Rede über Die Freiheit der Wissenschaft im Modern Staat. Leipzig, 1878.

Ueber Cellularpathologie und Infectionskrankheiten. Prag, 1878.

Ueber Cholera Asiatica. Nach Beobachtungen in Genua. Basel, 1885.

Die Trinkwasserversorgung der Stadt Zürich und ihrer Ausgemeinden, 1885.

Die Causale Behandlung der Tuberculose. Pp. 500: Leipzig, 1894.

Klebs was also editor of the *Correspondenz-Blatt für Schweitzer Aerzte*, in 1871. His work in the Berne Pathologic Institute (Würzburg, 1873) and with Tommasi-Crudelli on Malaria are of international interest.

His great work on General Pathologie, Jena, 1886, is, however, that on which his fame will chiefly rest. The fact remains, however, that at this time Professor Klebs, in Pathology, is second only to Virchow.

Practical Notes.

Advantage of Using Warm Solutions of Cocain.—Costa has found that the local anesthetic effect obtained with cocain is more rapid, more intense and more lasting, if the solution is warm. The dangers of intoxication are thus much diminished, as the quantity of cocain can be very much reduced, if it is warmed. A solution at 0.5 or 0.4 per cent. heated, will produce a powerful effect.—*Semaine Médicale*, May 9.

Nicotin Soap in Dermatology.—The use of soap strongly impregnated with nicotin is recommended in the *Monatsh. f. prak. Derm.* Vol. XXI, No. 12, for cutaneous diseases produced by a parasite, especially for scabies. It is effective, cheap and easily used by anyone, although it should be watched to prevent accidents from its use, as it has been known to produce vomiting in a child, with change in the pulse. The soap should contain about 0.7 per cent. nicotin, or extract of tobacco.—*Nouveaux Remèdes*, May 24.

An Excellent Diagnosis by the Roentgen Rays.—We have a photograph giving not only a clear illustration of the Roentgen process but a clear diagnosis in a case which could not otherwise be made out. Dr. Charles Denison, who sends it to us, says that several physicians saw the arm, but all were uncertain as to what had occurred. The old lady, in falling to the ground, had received the force of the fall upon the palm of the hand and had sought no physician's advice till nearly four weeks after the injury. The impaction of the shaft of the radius into the head of the bone is very clearly shown. The work was done by the Mountain Electric Company in Denver, under the supervision of Mr. Charles F. Lacombe.

Treatment of Alopecia Areata with Acetic Acid and Scarifications.—Faivre ascribes this affection to a micrococcus (Vaillard's), and has found that by slightly scarifying the surface with the point of a bistoury and painting it with acetic acid, a growth of pathogenic staphylococci substitutes the former growth, and recovery ensues. After the slight eschar thus produced has fallen off, a growth of natural hair follows, unless the trouble is complicated with a destructive folliculitis, or it proves to be the decalvant form, which resists all treatment and is probably of tropho-neurotic origin. It may be necessary to repeat the operation every day for a month, or more. Rigorous antiseptic precautions should be taken to prepare for the scarifications, and to prevent the spread of the affection in all its stages. Full details of this treatment are given with reports of cases in the *Archives Cliniques de Bordeaux* for April.

Washington.

WEEKLY REPORT OF HEALTH OFFICE.—The report of the Health Officer for the week ending June 6, 1896, is as follows: As reported the deaths numbered 83, while for the previous week they amounted to 85. The death rate for the week was 15.63 for the total inhabitants, that for the whites being 13.58, and that for the colored 20.11. The annual average death rate for the District of Columbia is 23.67, being 18.84 for the whites and 33.44 for the colored. Of diphtheria 3 new cases and 1 death were reported. No house was released from quarantine and six remained placarded. No death from scarlet fever occurred; 3 new cases were reported; three premises relieved from quarantine, leaving eight in quarantine.

IMPOSTOR FOOLS THE DOCTORS.—An alleged deaf and dumb man has been securing donations from medical men in this city by presenting a certificate of disability purporting to be signed by Dr. G. W. Cook. Quite a number were victimized.

VACCINATION WILL NOT BE PAID FOR.—A great injustice has been done to the Physicians to the Poor of this city by Congress striking out the item in the Appropriation bill of $1,500 to pay those physicians for extra work in vaccinating a large number of persons during the smallpox epidemic last year.

THE BOARD OF MEDICAL EXAMINERS for the District of Columbia will in a short time be appointed by the Commissioners as provided for in the new law regulating the practice of medicine and surgery in the District. They have sent notices to the medical societies of the city, from whose members the examiners will be selected. The societies are requested in these notices to furnish the names of their members within fifteen days. According to the act, the Commissioners are to appoint three boards of medical examiners, one for each school of medicine. The passage of this bill has been desired for the past twenty years and is now a law. The credit of its passage is due almost entirely to the personal efforts of Dr. Samuel C. Busey, President of the Medical Society and chairman of the legislation committee, who has given most of his time in looking after medical bills of benefit and interest to the medical profession. This JOURNAL has added its influence in these matters.

APPOINTED PROFESSOR IN HOWARD UNIVERSITY.—At the last meeting of the faculty of Howard University Dr. Charles Emmons was elected professor of mental diseases.

FOR THE HOME FOR INCURABLES.—A little over a year ago a chain letter scheme was started for the benefit of the Home for Incurables. It has met with a generous response, and has brought in $1,735.

A NEW HOME AND HOSPITAL.—Articles incorporating "The National Hospital and Orphanage" have been filed by Rachel E. Tomlinson, president; Amelia Marggraf, vice-president; Edith A. Bauer, secretary; Sarah J. Douglas, financial secretary; Eliza A. B. Chambers, treasurer. The purposes of the association are to provide a home and care for homeless, aged and indigent men and women, and also a hospital, as well as to educate, care and provide for orphans and homeless children without regard to sect or creed.

ITEMS INCLUDED IN THE DISTRICT APPROPRIATIONS BILL.—Under the health department the following organization is authorized: Health officer, $2,000; nine inspectors at $1,200; sanitary inspector, who shall also be a chemist, $1,500; inspector of live stock and dairy farms, $1,200; inspector of marine products, $1,200; chief clerk, $1,800; clerk, $1,400; four clerks at $1,200, two of whom may also act as inspectors; clerk, $1,000; janitor, $600; poundmaster, $1,200; laborers, $1,920; driver, $480; in all, $30,000. Other items under the health department are: Rent of stable, $120; collection of garbage, dead animals and the distribution, $57,000; enforcement of the act to prevent the spread of scarlet fever and diphtheria, $5,000; for ambulance for contagious diseases, $350; for the relief of poor, $13,000; Central Dispensary and Emergency Hospital, $15,000; Children's Hospital $10,000; Homeopathic Hospital, $8,500; Washington Hospital for Foundlings, $6,000; Eastern Dispensary, $1,000; Home for Incurables, $2,000; Columbia Hospital for Women, $25,000, including repairs.

FREEDMEN'S HOSPITAL AND ASYLUM.—For subsistence, $22,500; for salaries, $16,000; for rent of hospital buildings and grounds, $4,000; for miscellaneous expenses, $11,500.

The following important proviso was added: Provided, that no member or members of any board or boards of trustees or directors of any charitable institution, organization or corporation in the District of Columbia, which is supported in whole or in part by appropriations made by Congress, shall engage in traffic with said institution, organization or corporation for financial gain, and any member or members of such board of trustees or directors who shall so engage in such traffic shall be deemed now and hereafter legally disqualified for service on said board or boards.

SUICIDE IN ST. ELIZABETH'S ASYLUM.—An insane inmate of the St. Elizabeth's Hospital committed suicide on the 11th inst., by hanging himself to the iron bars of his cell. He was discovered dead the following morning.

Philadelphia.

THE FIRST EXAMINATION IN OPHTHALMOLOGY AT THE JEFFERSON.—In connection with the very interesting series of papers recently read before the Academy of Medicine, discussing the best methods of teaching various branches of medical study, it may be of some interest to refer to the results of the examinations upon ophthalmology of the last graduating class of Jefferson Medical College. It may be said in explanation that two circumstances make this examination a memorable one: One being that this is the first time in the history of the college when this examination was made obligatory and its results taken into consideration in determining the standing of the candidate for the degree: the other being that the next course will inaugurate a radical change in the system of teaching ophthalmology at this school. In the four-year graded course, the members of the graduating class only, will be required to attend one lecture per week, and class sections will attend daily clinical demonstration and the quizzes, under the direction of Professor William Thomson, Clinical Professors Howard F. Hansell and G. E. DeSchweinitz, and their Chief Assistants, Drs. Sweet and Veasey. The class that had just graduated has had the opportunity of attending weekly lectures upon ophthalmology during the last three years, and also the daily clinics which were established twenty-four years ago by Professor Thomson, and have formed an integral and important part of the teaching at this school since that time. The results of the examination may be summarized as follows: The number examined was 229; of whom twelve received the highest mark 100; from 90 to 99 was taken by ninety-nine; from 70 to 89 by ninety; from 60 to 70 by fifteen; and below the minimum of 60 was received by only thirteen. It is seen that over 200 passed above 70 and that nearly half passed above 90, only twenty-eight were below 70, which might well have been taken as the minimum. Those who passed high had attended the clinics regularly and were members of the quiz classes; those who fell below the average had evidently made little or no use of their advantages. A gold medal for an essay on Color Blindness was awarded at the Commencement to Albert W. Garren, Jr., of Philadelphia. It may be of interest to teachers of this branch to publish the list of questions asked at the first examination upon ophthalmology at the Jefferson Medical College. On account of the size of the class it was divided and examined on two successive afternoons. The examinations were in writing and the time was not limited.

QUESTIONS: What is meant by normal acuteness of vision; and how is it tested and expressed? 2. What are the most common constitutional conditions that may be revealed by an ophthalmoscopic examination? 3. Give a brief definition of the chief anomalies of refraction. 4. How may a concomitant squint be distinguished from a paralytic squint? 5. What are the prophylaxis and treatment of ophthalmia neonatorum? 6. What should be done to check the progress of a corneal ulcer? 7. How would you distinguish between acute iritis and acute glaucoma? 8. What are the causes, symptoms and treatment of interstitial keratitis? 9. Describe the methods for the diagnosis and treatment of cataract. 10. What is meant by the "dangerous zone" of the eye, and what are the dangers of injuries in that region?

(Second set.) 1. Give the differential diagnosis of iritis and conjunctivitis. 2. What is the proper treatment, local and constitutional, of acute syphilitic iritis? 3. Describe the operations of enucleation of the eyeball. 4. What operations are used in the treatment of congenital and senile cataract? 5. What is epiphora and its treatment? 6. What is central scotoma and give its causes? 7. What are the errors of refraction and how are they corrected? 8. What reflex symptoms attend ametropia? 9. What relation is there between internal squint and hypermetropia? 10. What is the treatment of internal squint combined with hypermetropia?

Louisville.

THE HOSPITAL COLLEGE OF MEDICINE, of Louisville, has purchased a lot adjoining the college buildings for the erection of a hospital. Ground will be broken immediately and the work will be pushed to completion before the opening of the session of 1897. The hospital will have a modern clinical and operating theater with seating capacity for 300 students, with ample wards and private rooms, and will be a most important addition to the teaching facilities of the college.

THE KENTUCKY SCHOOL OF MEDICINE held its annual commencement on June 16. The Hospital College of Medicine held its graduating exercises on the 18th.

JENNIE CASSEDAY INFIRMARY.—Two graduates of the training school for nurses of this institution were awarded diplomas at the completion of their course on the 8th inst. The address was made by Dr. J. M. Mathews and by the Rev. Mr. Jennings, at the conclusion of which the assembled guests were shown through the infirmary and a collation was served.

LOUISVILLE COLLEGE OF MEDICINE.—At the faculty meeting recently held the announcements of the changes in the personnel of the faculty was made. As already announced in these columns, Dr. A. M. Cartledge was elected to succeed Dr. J. A. Ireland, who was made emeritus Professor of Gynecology; Dr. W. C. Dugan was made Professor of Surgery in the place of Dr. Cartledge; Dr. J. W. Guest will be Clinical Assistant to the Chair of Surgery; Dr. J. W. Williams will be Lecturer on Proctology; and Dr. Curran Pope will lecture upon Diseases of the Mind and Nervous System. This leaves a vacancy in the Assistant Staff of the Kentucky School, Dr. Guest resigning as Assistant in Gynecology and Abdominal Surgery, and Dr. Pope resigns from the Hospital College of Medicine where he held the same position as the one in the Louisville School. Dr. Harris Kelly has been made Lecturer on Histology and Chemistry.

FEEBLE-MINDED INSTITUTE.—Dr. J. P. Huff, the Superintendent of the Institution for Feeble-Minded Children located in Frankfort, received the World's Fair medal and certificate of first award granted to Kentucky for the finest and best display of work done by any institution for feeble-minded children. The medal is a handsome bronze affair and the certificate of award is engraved on parchment.

TEMPERATURE—A case of malaria developed in the person of one of the children of the Masonic Widows' and Orphans' Home, aged about 11 years, in which the temperature reached 107.5 degrees. This was tested by several thermometers, two of them being registered Hicks.

DURING THE EXAMINATION of students for degrees at the Hospital College of Medicine a bottle of bromin exploded in the hands of Prof. Philip F. Barbour, by which he was badly burned, and a student was also seriously burned, also inhaling some of the fumes from which a bronchitis has developed and he is in a serious condition. Dr. Barbour's injuries were only burns on the hands and wrist but were very painful.

STATE BOARD OF HEALTH.—The regular meeting of this board was held June 9. Dr. Mathews was reëlected president; Dr. McCormack, secretary; Dr. Eisenman, veterinary surgeon; Jno. L. Long, sanitary inspector; Jno. Cashin, bacteriologist. Drs. Kinnard and Samuels are the new members appointed in the place of Drs. Beeler and Lucy, whose terms had expired. Dr. Long submitted a report of his investigations of epidemics of smallpox through the State. Representatives of the Physio-Medical College of Indianapolis appeared before the board requesting that their diplomas be recognized by the board, but on consideration the board refused to grant their request. Dr. McReynolds offered the following resolution, which was adopted: "Resolved that the State Board of Health requests the State Medical Society to recommend the passage of a statute by the next Legislature to punish the crime of abortion. That the Society be requested to instruct the president to appoint a committee of five to investigate the laws and urge the passage of a law by the legislature." Dr. McReynolds, speaking to the above, cited the case of a man in Owen County who was fined $300 in the lower court, but this decision was reversed in the court of appeals, Judge Hines in handing down his decision stated that there should be a law to cover this crime. The following resolution was also passed by the board: "Resolved that the State Board of Health of Kentucky regards the intentional production of abortion upon any woman either before or after quickening (unless it shall be deemed necessary after consultation with at least one licensed physician of good moral character to preserve the life of the woman). The State Board of Health will revoke the license of any physician found guilty of such crime. An attempt to conceal the fact that an abortion was produced will be considered as *prima facie* evidence that it was not done to preserve the life of the woman." The committee appointed to consider the President's address reported as follows: "We heartily endorse the paper so ably prepared and delivered to-day, which we recommend for adoption and publication that the profession may be benefited thereby. We suggest that the State Board of Health take immediate steps to abate the spitting nuisance and if possible interest the State and municipal authorities in the suppression of this evil. We would dissent from the New York requirements for graduation, in that we hold that a college education in English in some academy or high school is sufficient preliminary training for the majority. It is not our intention to discourage a thorough literary course for medical students, but such an education is impossible to many worthy young men who wish to enter upon the study of medicine. We would not have the board discriminate against the diplomas from medical colleges in small cities, for many of them are controlled by men eminent in our profession and their graduates are the peers of educated men from the colleges in the larger cities. The address of President Mathews should be widely read and the principles enunciated carried into practice."

THE PUBLIC SERVICES.

Army Changes. Official List of changes in the stations and duties of officers serving in the Medical Department, U. S. Army, from June 6 to June 12, 1896.

Capt. Philip G. Wales, Asst. Surgeon, is relieved from temporary duty at Ft. Monroe, Va., and will return to his proper station, Ft. McPherson, Ga.

Navy Changes. Changes in the Medical Corps of the U. S. Navy for the week ending June 13, 1896.

P. A. Surgeon P. H. Bryant, ordered to naval station, Newport, R. I.
Asst. Surgeon C. M. De Valin, detached from the Chelsea (Mass.) hospital, and ordered to the "Blake."
P. A. Surgeon E. R. Stitt, detached from the "Bache" and ordered to the "Vermont" June 15.

Change of Address.

Baird, T. M., from Forest City, Ark., to Thurber, Texas.
Bartlett, K. H., from 167 Dearborn St. to 125 La Salle St., Chicago, Ill.
Beegle, H. B., from Chicago to Blue Island, Ill.
Brauns, E., from 3 Lincoln Av. to 510 Cleveland Av., Chicago, Ill.
Caldwell, Joseph R., from New Hamburg to Greenville, Pa.
Corr, J. T., from Chicago, Ill., to Franksville, Wis.
Cutlin, W. H., from 301 E. Fayette St. to 408 E. Genesee St., Syracuse, N. Y.
Englemann, Rosa, from 3444 to 3027 Indiana Av., Chicago, Ill.
Gilman, J. E., from 2419 Indiana Av. to Metropole Hotel, Chicago, Ill.
Heise, Ellen H., from Canton, Ill., to Bay View, Mich.
Hills, A. K., from New York, N. Y., to Hudson, N. H.
Schottler, G. J., from Chicago, Ill., to Dexter, Minn.
Sherman, H. M., from 705 Sutter St. to 1303 Van Ness Av., San Francisco, Cal.
Sobey, A. L., from 810 to 3524 20th St., San Francisco, Cal.
Strong, B. F., from Chicago, Ill., to Howard, Kan.

LETTERS RECEIVED

Adams, Ovid L., Shelbyville, Ind.; Allen, J. M., Liberty, Mo.
Barringer, J. C., Oskaloosa, Iowa; Bates, X. T., Poughkeepsie, N. Y.; Bell, A. E., Zanesville, Ohio; Blech, Gustavus, Detroit, Mich.; Briggs, T. C., Pierz, Minn.; Burge, J. H. Hobart, Brooklyn, N. Y.; Burr, C. B., Flint, Mich.; Busey, S. C., Washington, D. C.
Christison, J. Sanderson, Chicago, Ill.; Cleveland, J. L., Cincinnati, Ohio; Collard, W. A., Cincinnati, Ohio; Cole, C. K., Helena, Mont.; Cokenower, J. W., Des Moines, Iowa; Connor, Leartus, Detroit, Mich.; Craig, G. G., Rock Island, Ill.
Daniel, John B., Atlanta, Ga.; Dewey, Richard, Wauwatosa, Wis.
Elliott, Arthur R., Chicago, Ill.; Elliott, A. R., New York, N. Y.
Fehr, Julius, Hoboken, N. J.; Fite, C. C., New York, N. Y.; Fuller, W. M., Bowling, Ohio; Fulton, A. L., Iola, Kan.
Gates, Wm. S., Chicago, Ill.; Gihon, A. L., New York, N. Y.
Haldeman, F. D., Ord, Neb.; Haldenstein, L., New York, N. Y.; Hale, Albert B., Chicago, Ill.; Hamilton, C. S., Columbus, Ohio; Hayes, D. J., Milwaukee, Wis.; Hayes, R. H., Union Springs, Ala.; "Health," The Proprietors of the, London, England; Hewitt, Chas. N., ted Wing, Minn.; Hill, Warren B., Milwaukee, Wis.; Hill, C. E., East Killingly, Conn.; Holt, E. E., Portland, Maine; Hubbard, Thos., Toledo, Ohio; Huff, O. N., Palmyra, Wis.; Hummel, A. L., Advertising Agency, New York, N. Y.
Imrie, Andrew W., Detroit, Mich.
Jelks, Jas. T., Hot Springs, Ark.; Johnson, N. L., Williamsport, Pa.
Kegan, Paul, Trench, Trübner & Co., Ltd., London, England; Kettner, C., Albion, Mich.; Kingsley, B. F., San Antonio, Texas.
Leaming, J. K., Cooperstown, N. Y.; Le Roy, L. D., Pleasant Valley, N. Y.; Lippincott, J. B. Co., Philadelphia, Pa.; Lord & Thomas, Chicago, Ill.
Macdonald, W. G., Albany, N. Y.; Malsbary, Geo. E., Cincinnati, Ohio; Marchand, Chas., New York, N. Y.; Macey, The Fred., Co., Grand Rapids, Mich.; Merrick, M. B., Passaic, N. J.; Mettler, L. Harrison, Chicago, Ill.; Moran, J., New York, N. Y.
Nelson, Chesman & Co., Chicago, Ill.; Nixon, J. W., Soldier, Kan.
Parker, W. A., Holyoke, Mass.; Portman, Adeline E., Washington, D. C.; Prentiss, Spencer B., Washington, D. C.; Pressey, A. J., Grand Rapids, Mich.; Pusey, W. A., Chicago, Ill.
Reddick, J. T., Paducah, Ky.; Reed, R. Harvey, Columbus, Ohio; Reed & Carnrick, New York, N. Y.; Renfro, J. C. B., Houston, Texas; Ruth, C. E., Keokuk, Iowa.
Schering & Glatz, New York, N. Y.; Simmons, Geo. H., Lincoln, Neb.; Staver & Abbott Mfg. Co., Chicago, Ill.; Standard Mfg. Co., Pittsburg, Pa.; Straus, Irving J., Chicago, Ill.; Sutherland, J. Lue, Grand Island, Neb.
Tuley, Henry E., Louisville, Ky., (2); Tyler, J. B., Billerica, Mass.
Vaughan, G. T., Port of Philadelphia, Pa.
Walker, Geo. W. W., Roseville, Ohio; Weever, J. B., Evansville, Ind.; West, C. J., Washington, D. C.; White, A. J., New York, N. Y.; Whitford, Wm., Chicago, Ill.; Wood, Wm. & Co., New York, N. Y.; Wyeth, M. C., Fort McPherson, Ga.
Young, Stephen J., Terre Haute, Ind.